Index for Volume 100

AUTHOR AND SUBJECT INDEX. Page numbers of errata are in italic.

Abad, J. A., S1, S173
Abad, Z., S150, S153
Abad, Z. G., S150
Abbas, H. K., 532, S1
Abbasi, P. A., S1
ABC transporters, *Cercospora coffeicola* on coffee and, S121
Abd-Elgawad, M. M., S1
Abdelkarim, M. M., S2
Abel, C. A., S1
Abeywickrama, K., 1057
Abies balsamea, climate change and tree dieback and decline in Maine, S195
Ablova, I. B., S65
Abonyi, F., S51
Abou Ghanem-Sabanadzovic, N., S2, S112
Abou Tabl, A., S176
Abouzeid, M., S34
Abrahamsen, U., S36
Abrameit, A., S54
Abramova, S., S207
Abril, M., S134
Abscisic acid
  Fusarium oxysporum on melon and production of, modification by *Trichoderma harzianum* and *Glomus intraradices*, 682
  and *Phytophthora capsici* infection, S104
  and *Phytophthora* spp. on tomato and chrysanthemum, salt-induced susceptibility, 871
  and resistance of rice against *Rhizoctonia solani*, S146
Acacia koa (koa), *Fusarium oxysporum* on, in Hawaii, S118
Acanthorhynchus vaccinii, on cranberry, S101
Accinelli, C., S1
Acevedo, M., 511, S45
Achar, P., S2
Achenbach, U. C., S15
Acholeplasma palmae, Acholeplasmavirus P1 from, S29
Acholeplasmavirus P1, from *Acholeplasma palmae*, S29
Achor, D. S., 756, 949
Acibenzolar
  and systemic acquired resistance against *Xanthomonas citri* subsp. *citri*, S42
  for *Xanthomonas fragariae* on strawberry, S83
  for *Xanthomonas perforans* on tomato, S178
  for *Xanthomonas* sp. on shrub rose, S177
Acidovorax spp.
  A. avenae subsp. *citrulli*
    on cucurbits, survival in stored seeds, S200
    quorum sensing, virulence and seed-to-seedling transmission, S148
    on watermelon, effect of mechanism of infestation on localization, S148
  A. citrulli, PAMDB and, 208
Acosta, T., S96
Acosta-Leal, R., 127, S2, S120, S149
Acremonium zeae, on maize, interactions with *Aspergillus flavus*, S137
ACTTS2 (ACT-toxin synthesis) gene, of *Alternaria alternata*, and pathogenicity, 120
Adams, G. C., 337
Adams, I., S154
Adaptive cluster sampling, for estimating plant disease incidence, 663
Adaskaveg, J., S2, S163, S166
Adaskaveg, J. E., 738, S141
Adelfinskaya, Y., S63
Adhikari, T. B., S3, S45, S76
Adjuvant, fungicide performance assessment and, S142
Adkins, S., 1194, S70, S134
Adkison, H., S129
ADON (acetyl-deoxynivalenol). *See* Deoxynivalenol
Adult-plant resistance, of wheat against stripe rust, identification of genomic regions controlling, 313
Aflatoxin
  from *Aspergillus* spp.
    A. flavus: effect of varying sugar concentrations on, S128; on maize, S37, S96; variation in competitive ability among isolates, 150; in vivo vs. in vitro production of, S103
    PCR detection of in corn and red flour beetle, S29
  in corn
    in Nigeria, mitigation with atoxigenic strain mixes, S8
    tillage management and, S1
  partnerships for biological control of, S162
Agaricus bisporus (button mushroom), global expansion in gourmet and medicinal cultivation, S163
Agdia, Inc., *Phythophthora ramorum* detection in field within 30 minutes, S15
Aggregate sheath spot, *Rhizoctonia oryzae-sativae* on rice, population structure of in California fields, 493
Agilent GeneChip Array, for *Candidatus* Liberibacter on citrus, S61
Agindotan, B. O., S3
Agra, O., S33
Agrobacterium tumefaciens, on walnut seeds used for rootstock production, S141
Agrostis stolonifera (creeping bentgrass)
  Anguina agrostis on, effect of aging on survival and heat tolerance, S206
  chlorothalonil and iprodione residues on, ELISA kits for, S64
  isoparaffin-based oil for controlling dollar spot and gray leaf spot in, S208
Aguayo, J., 1262
Agyemang, P. A., S3
Ahn, K., S97
Ahonsi, M. O., S3
Aime, M. C., S113
Ajiro, N., 120
Akimitsu, K., 85, 120
Akridge, J. R., S46
Al Rwahnih, M., S3
Alabi, O. J., 698, S3, S101
Alananbeh, K. M., S182
Albacete, A., 682
Albugo candida, on canola, host-pathogen interactions, S60
Alder, *Phytophthora alni* on, model for detection of asymptomatic infectious individuals, 1262
Aldrich-Wolfe, L., S4
Alexandrova, A. V., S64
Alezones, J. M., S4
Al-Hamdany, M., S4
Ali, A., S4
Ali, M. B., S38
Ali, S., S4
Alishiri, A., S4
Alkharouf, N. W., S127
Allelopathy, sorghum, impact of mycorrhizal infection on sensitivity of wheat to, S2
Allen, C., S22, S55, S66, S115, S173
Allen, P., S30
Allen, R., S110
Allen, T. W., S5, S49, S112
Allium spp.
  bacterial diseases on, in Pennsylvania, S195
  A. cepa (onion)
    bacterial diseases on, in Pennsylvania, S195
    multiplex PCR for simultaneous detection of eight pathogens in, S77
    Pantoea ananatis on, transposon mutagenesis of for isolate with reduced virulence, S144
    Phoma terrestris on, fungicide dip treatments for, S113
  A. sativum (garlic)
    Fusarium proliferatum on, fusaric acid production and, S95
    Sclerotium cepivorum on, in Maine, S194
D-Allose, 85
Almeida, R., S62
Almeida, R. P. P., 830
Almeyda, C. V., S5
Almond. *See Prunus dulcis*
Alrwahnih, M., S5
Alternanthera mosaic virus, and vectors for virus-induced gene silencing and protein expression, S71
Alternaria spp.
  A. alternata
    ACTTS2 gene of, and pathogenicity, 120
    on citrus, S85
    increasing carbon dioxide and sporulation of, S208
    on Japanese pear, reactive oxygen species generation and penetration of appresoria, 840
    rapid screening for fungicide resistance, S130
    on tangerine, S6, S174
    on tomato, S33
  A. brassicicola, transcription factors in pathogenicity of, S25
  A. solani
    on potato, 454, S14
    synergistic agents for, reduction of resistance and health risks, S61
    on tomato in North Carolina, S55
  A. tagetica, on marigold, S46
  on *Vaccinium meridionale*., S19
Altland, J. E., S74
Altosaar, I., 848
Alvarado-Hernandez, M., S5
Alvarez, A., S86
Alvarez, A. M., S66, S78, S96, S98
Alvarez, E., S5
Alvarez-Medina, A., S6
Alves, E., S36
A.-M. Simao-Beaunoir, 91
Amaku, M., 1042
Amaradasa, B. S., S6, S152
Amaranthus cruentus, *Choanephora cucurbitarum* on, in Nigeria, S9
Ambrosia asymptomatic virus 1 (AAV-1), from Tallgrass Prairie Preserve in Oklahoma, sequence data, S121
American chestnut. *See Castanea dentata*
American Phytopathological Society
  creation of, 14
  Office of Science and Technology Policy fellowship, S168
  opportunities for funding and regulatory policy priorities, S167
Ames, K. A., S191
Ametoctradin
  as oocyte-specific fungicide, S63
  for *Phytophthora* spp., S90
Amini, N., S6
Aminian, H., 454

Index for Volume 100

AUTHOR AND SUBJECT INDEX. Page numbers of errata are in italic.

Abad, J. A., S1, S173
Abad, Z., S150, S153
Abad, Z. G., S150
Abbas, H. K., 532, S1
Abbasi, P. A., S1
ABC transporters, *Cercospora coffeicola* on coffee and, S121
Abd-Elgawad, M. M., S1
Abdelkarim, M. M., S2
Abel, C. A., S1
Abeywickrama, K., 1057
Abies balsamea, climate change and tree dieback and decline in Maine, S195
Ablova, I. B., S65
Abonyi, F., S51
Abou Ghanem-Sabanadzovic, N., S2, S112
Abou Tabl, A., S176
Abouzeid, M., S34
Abrahamsen, U., S36
Abrameit, A., S54
Abramova, S., S207
Abril, M., S134
Abscisic acid
  Fusarium oxysporum on melon and production of, modification by *Trichoderma harzianum* and *Glomus intraradices*, 682
  and *Phytophthora capsici* infection, S104
  and *Phytophthora* spp. on tomato and chrysanthemum, salt-induced susceptibility, 871
  and resistance of rice against *Rhizoctonia solani*, S146
Acacia koa (koa), *Fusarium oxysporum* on, in Hawaii, S118
Acanthorhynchus vaccinii, on cranberry, S101
Accinelli, C., S1
Acevedo, M., 511, S45
Achar, P., S2
Achenbach, U. C., S15
Acholeplasma palmae, Acholeplasmavirus P1 from, S29
Acholeplasmavirus P1, from *Acholeplasma palmae*, S29
Achor, D. S., 756, 949
Acibenzolar
  and systemic acquired resistance against *Xanthomonas citri* subsp. *citri*, S42
  for *Xanthomonas fragariae* on strawberry, S83
  for *Xanthomonas perforans* on tomato, S178
  for *Xanthomonas* sp. on shrub rose, S177
Acidovorax spp.
  A. avenae subsp. *citrulli*
    on cucurbits, survival in stored seeds, S200
    quorum sensing, virulence and seed-to-seedling transmission, S148
    on watermelon, effect of mechanism of infestation on localization, S148
  A. citrulli, PAMDB and, 208
Acosta, T., S96
Acosta-Leal, R., 127, S2, S120, S149
Acremonium zeae, on maize, interactions with *Aspergillus flavus*, S137
ACTTS2 (ACT-toxin synthesis) gene, of *Alternaria alternata*, and pathogenicity, 120
Adams, G. C., 337
Adams, I., S154
Adaptive cluster sampling, for estimating plant disease incidence, 663
Adaskaveg, J., S2, S163, S166
Adaskaveg, J. E., 738, S141
Adelfinskaya, Y., S63
Adhikari, T. B., S3, S45, S76
Adjuvant, fungicide performance assessment and, S142
Adkins, S., 1194, S70, S134
Adkison, H., S129
ADON (acetyl-deoxynivalenol). *See* Deoxynivalenol
Adult-plant resistance, of wheat against stripe rust, identification of genomic regions controlling, 313
Aflatoxin
  from *Aspergillus* spp.
    A. flavus: effect of varying sugar concentrations on, S128; on maize, S37, S96; variation in competitive ability among isolates, 150; in vivo vs. in vitro production of, S103
    PCR detection of in corn and red flour beetle, S29
  in corn
    in Nigeria, mitigation with atoxigenic strain mixes, S8
    tillage management and, S1
  partnerships for biological control of, S162
Agaricus bisporus (button mushroom), global expansion in gourmet and medicinal cultivation, S163
Agdia, Inc., *Phythophthora ramorum* detection in field within 30 minutes, S15
Aggregate sheath spot, *Rhizoctonia oryzae-sativae* on rice, population structure of in California fields, 493
Agilent GeneChip Array, for *Candidatus* Liberibacter on citrus, S61
Agindotan, B. O., S3
Agra, O., S33
Agrobacterium tumefaciens, on walnut seeds used for rootstock production, S141
Agrostis stolonifera (creeping bentgrass)
  Anguina agrostis on, effect of aging on survival and heat tolerance, S206
  chlorothalonil and iprodione residues on, ELISA kits for, S64
  isoparaffin-based oil for controlling dollar spot and gray leaf spot in, S208
Aguayo, J., 1262
Agyemang, P. A., S3
Ahn, K., S97
Ahonsi, M. O., S3
Aime, M. C., S113
Ajiro, N., 120
Akimitsu, K., 85, 120
Akridge, J. R., S46
Al Rwahnih, M., S3
Alabi, O. J., 698, S3, S101
Alananbeh, K. M., S182
Albacete, A., 682
Albugo candida, on canola, host-pathogen interactions, S60
Alder, *Phytophthora alni* on, model for detection of asymptomatic infectious individuals, 1262
Aldrich-Wolfe, L., S4
Alexandrova, A. V., S64
Alezones, J. M., S4
Al-Hamdany, M., S4
Ali, A., S4
Ali, M. B., S38
Ali, S., S4
Alishiri, A., S4
Alkharouf, N. W., S127
Allelopathy, sorghum, impact of mycorrhizal infection on sensitivity of wheat to, S2
Allen, C., S22, S55, S66, S115, S173
Allen, P., S30
Allen, R., S110
Allen, T. W., S5, S49, S112
Allium spp.
  bacterial diseases on, in Pennsylvania, S195
  A. cepa (onion)
    bacterial diseases on, in Pennsylvania, S195
    multiplex PCR for simultaneous detection of eight pathogens in, S77
    Pantoea ananatis on, transposon mutagenesis of for isolate with reduced virulence, S144
    Phoma terrestris on, fungicide dip treatments for, S113
  A. sativum (garlic)
    Fusarium proliferatum on, fusaric acid production and, S95
    Sclerotium cepivorum on, in Maine, S194
D-Allose, 85
Almeida, R., S62
Almeida, R. P. P., 830
Almeyda, C. V., S5
Almond. *See Prunus dulcis*
Alrwahnih, M., S5
Alternanthera mosaic virus, and vectors for virus-induced gene silencing and protein expression, S71
Alternaria spp.
  A. alternata
    ACTTS2 gene of, and pathogenicity, 120
    on citrus, S85
    increasing carbon dioxide and sporulation of, S208
    on Japanese pear, reactive oxygen species generation and penetration of appresoria, 840
    rapid screening for fungicide resistance, S130
    on tangerine, S6, S174
    on tomato, S33
  A. brassicicola, transcription factors in pathogenicity of, S25
  A. solani
    on potato, 454, S14
    synergistic agents for, reduction of resistance and health risks, S61
    on tomato in North Carolina, S55
  A. tagetica, on marigold, S46
  on *Vaccinium meridionale*., S19
Altland, J. E., S74
Altosaar, I., 848
Alvarado-Hernandez, M., S5
Alvarez, A., S86
Alvarez, A. M., S66, S78, S96, S98
Alvarez, E., S5
Alvarez-Medina, A., S6
Alves, E., S36
A.-M. Simao-Beaunoir, 91
Amaku, M., 1042
Amaradasa, B. S., S6, S152
Amaranthus cruentus, *Choanephora cucurbitarum* on, in Nigeria, S9
Ambrosia asymptomatic virus 1 (AAV-1), from Tallgrass Prairie Preserve in Oklahoma, sequence data, S121
American chestnut. *See Castanea dentata*
American Phytopathological Society
  creation of, 14
  Office of Science and Technology Policy fellowship, S168
  opportunities for funding and regulatory policy priorities, S167
Ames, K. A., S191
Ametoctradin
  as oocyte-specific fungicide, S63
  for *Phytophthora* spp., S90
Amini, N., S6
Aminian, H., 454

Ammar, E., S6, S27, S184
Ammar, E.-D., 1138
Amorim, L., S41, S118, S119
Ampelomyces spp., for biocontrol of *Erysiphe necator* on grapevine, S19
Amsden, B. F., S6
Amyotte, S., S6
Anaerobic soil disinfestation, for bell pepper/eggplant crop production, cover crop carbon sources for, S19
Ananas comosus (pineapple), *Dickeya* sp. on
  antibody-binding properties and seasonal disease severity indices and, S98
  introduction of to Hawaiian plantations, S78
Ananthakrishnan, G., 1077
Anchieta, A., S64
Anco, D. J., S6
Ancona, V., S7
Anderson, A. J., S158
Anderson, C., S177
Anderson, G., S11
Anderson, G. M., S66
Anderson, K. G., 279
Anderson, K. M., 279
Anderson, R., S158
Andreote, F. D., S35
Andrews, D. L., S98
Andrews, K., S9
Anguina agrostis, on creeping bentgrass, effect of aging on survival and heat tolerance, S206
Anjou pear. *See Pyrus communis*
Annamali mixture, for control of pathogens on mung bean, S129
Annual bluegrass. *See Poa annua*
Annular rings, for enhancing photographs of perineal patterns of root-knot nematodes, S32
Anthocyanins, *Grapevine leafroll-associated virus-3* in grape and, S45
Antigliani, V., S158
Antimicrobials, production by endophytic bacteria, S38
Antolínez, C. A., S7, S29
Antoun, H., S193
Anu, A. E., S117
Aoki, T., 58, 1176
Aphanomyces cochlioides, on sugar beet in Michigan, S47
Aphids, and *Cereal yellow dwarf virus-RPV* in oat, S100
Aphis glycines, and transmission and evolution of *soybean dwarf virus*, S126
Apium graveolens (celery), *Apium virus Y* in, biological characterization and complete genome sequence, S140
Apium virus Y (ApVY), in celery, biological characterization and complete genome sequence, S140
Appel, D. N., S7
Apple. *See Malus* × *domestica*
Apple dimple fruit (ADFVd) and *Apple fruit crinkle* (AFCVd), multiplex real-time RT-PCR assay for simultaneous detection of four viroids and, S72
Apple proliferation (AP) disease
  Candidatus Phytoplasma mali and, 863
  phloem cytochemical modification and gene expression after recovery from, 390
Apple scar skin (ASSVd), multiplex real-time RT-PCR assay for simultaneous detection of four viroids and, S72
APS Public Policy Board safety initiative, S155
Arabidopsis spp.
  coronatine-dependent suppression of innate immunity in guard cells, S91
  Pseudomonas syringae pv. *tomato* on, stomate-based defense against, S24
  A. thaliana
    clusters of disease-related genes in genome of, S208
    soybean cyst nematodes on, characterization of bHLH transcription factors induced in, S187
    Xylella fastidiosa on, ecotypes with differential susceptibility, S110
  Turnip mosaic virus in, differential regulation of host mRNA translation initiation, S188
  WRKY proteins and responses to biotic and abiotic stress, S47
Arabis mosaic virus (ArMV)
  on grape in Iran, S31
  on rose, chemo-thermotherapy for control of, S84
Arachis hypogaea (peanut)
  Aspergillus section *Nigri* on, S10
  Cercospora arachidicola on, S105, S200
  Cercosporidium personatum on, S200
  cylindrocladium black rot of, S100
  impact of cropping sequence on, cotton, corn and, S20
  Puccinia arachidis on, S8
  sampling for pod rot of, S136
  Sclerotinia minor on, S204
  Sclerotium rolfsii on, S40, S199
  soilborne pathogens causing pod rot of, in New Mexico, S114
  Tomato spotted wilt virus in, S105
  Verticillium dahliae on, S204
Arai, M., 612
Araujo, L., S122
Araújo, W. L, S35, S77
Arauz, L. F., 959
Arbuscular mycorrhizal fungi
  effect of cropping systems on community diversity and structure, S57
  and *Phytophthora* spp. on pistachio in Iran, S85
  on tomato, effect of cropping systems on community diversity and structure, S173
Areca catechu (betel nut), *Phytophthora palmivora* on, phosphoric acid application and, S178
Arellano, C., 72, S114
Arevalo, H. A., S77
Arevalo Zelada, J., S125
Arias, M. M. Díaz, 345
Arif, M., S7, S19, S30
Aritua, V., S7
Armillaria mellea, genetic diversity patterns and population structures of, 708
AroQγ chorismate mutase, in *Xanthomonas oryzae* pv. *oryzae*, and rice virulence, 262
Arredondo, F., S158
Arrellano, C., 719
Arriaga, F. J., S16
Arrieta, M. L., S8
Arul, J., S65
Asalf, B., 246, S8
Asano, S., 436
Ascochyta rabiei, on chickpea, penthiopyrad for, S125
Ascophyllum nodosum, for *Fusarium* spp. on cucurbits, S18, S205
Ashizawa, T., 612
Ashton, P., S154
Asian citrus psyllid. *See Diaphorina citri*
ASM (acibenzolar-S-methyl), induced systemic resistance and, S165
Asparagus, *Phytophthora asparagi* on, in Michigan, S176
Aspergillus spp.
  aflatoxin-producing strains, PCR detection of in corn and red flour beetle, S29
  A. flavus
    aflatoxin production, S8, S103, S128
    and *Aspergillus parasiticus*, heterokaryon incompatibility, S85
    crop rotation and persistence of atoxigenic strain of, S55
    host and life strategy adaptations, and competition among isolates, S81
    inhibition of by *Pseudomonas* spp., and decreased airborne spore dispersal, 532
    on maize: and aflatoxin, mitigation with atoxigenic strain mixes, S8; interactions with *Acremonium zeae*, S137; kernel maturation and transcriptional activity, S108; lipoxygenases and aflatoxin accumulation, S96; mycotoxins from, S4; resistance against, S37; at-tassel fungicide application and, S49; variation in competitive ability among isolates, 150
    mating between cryptic species I and II, S28
    mycotoxin diversity in, S157
    response to sublethal atmosphere of ozone, S138
    sexual reproduction of, S92
    soil vs. corn kernel populations, S124
    vegetative compatibility groups of, S43
  A. parasiticus
    and *Aspergillus flavus*, heterokaryon incompatibility, S85
    mycotoxin diversity in, S157
    phylogenetic relations, host adaptation, and global transport of, S39
  on peanut, detection of toxin and non-toxin forms of, S2
  section *Nigri*, S10, S95
Aster leafhoppers. *See Macrosteles quadrilineatus*
Aster yellows phytoplasma, influence of time, host plant, and location on diversity of, S33
Atalantia ceylanica, *Candidatus* Liberibacter asiaticus on, S107
Atallah, Z. K., 1222, S8, S24, S64, S79
Atehnkeng, J., S8
Athinuwat, D., S8
Atiri, G. I., S113, S126
Auge, R. M., S44
Augusto, J., S8, S199
Aureobasidium pullulans, for brown rot blossom blight of sour cherry, S51
Austerweil, M., 367
Autio, W. R., S197
Auxin, and bacterial production and turnover, S158
AV2 protein of, of *Tomato yellow leaf curl China virus* as silencing suppressor, S139
Avant, J. B., 484
Avanzato, M., S111
Avena spp.
  A. barbata, *Puccinia coronata* on, and resistance, broad-spectrum, sources, S21
  A. sativa (oat)
    Cereal yellow dwarf virus-RPV in, S100
    fungicides for control of crown rust on, S46
    Puccinia coronata on, 484, 511
Avenot, H. F., S9
Avila, L. L., S9
Avirulence genes
  of *Magnaporthe oryzae*, 436, 612, S204
  Pseudomonas syringae on potato, S23
  Pseudomonas syringae on soybean, S106
  Xanthomonas oryzae pv. *oryzae* and, S159
Avis, T. J., S193
Avocado. *See Persea* spp.
Awurum, A. N., S9
Ayodele, M., S117
Ayres, A. J., S74
Azelaic acid, priming plant defense and, S160
Azevedo, J., S35
Azospirillum brasiliense, for control of *Ustilago scitaminea*, S111
Azoxystrobin
  for *Cercospora sojina* on soybean, S145
  for *Rhizoctonia solani* on sugar beet, S48, S102

Babadoost, M., S9, S108, S126, S190, S191, S196
Babujee, L., S55
Baccari, G. V., S60
Baccharis sp. influence of fallow soil period on, in Bolivian highlands, S41
Bacillus spp.
B. cereus, endophytic vs. strains causing foodborne illness, S82
for inhibition of *Magnaporthe oryzae*, S106
B. mojavensis, substrate and surfactin production by, S10
B. mycoides, for *Fusarium* spp. on wheat, S87
B. pumilus strain INR-7, S165
in rhizosphere of potato, as PGPR inoculants for improved production, S20
B. subtilis
for control of gray mold on tomato and powdery mildew on cucumber, S70
for control of *Plasmodiophora brassicae* on canola, S99
for control of *Verticillium dahliae* on cotton, S75
lipopeptide production by, source of polypeptone in culture and, S143
M36, for *Fusarium solani* f. sp. *phaseoli*, S84
MBI 600, S65
QST 713, S131, S165, S195
B. thuringiensis (Bt) proteins, in corn, for pest management, S183
Backup, P., S17
Backus, E. A., S9
Bacon, C., S10, S147
Bacon, C. W., S10
Bactericera cockerelli (potato psyllid)
and *Candidatus* Liberibacter solanacearum on potato in Texas Panhandle, S50
detection of *Candidatus* Liberibacter spp. in, S77
Bacteriophages, for biological control of *Pseudomonas solanacearum* and *Xanthomonas campestris* on tomato, S34
Badebo, A., S93
Badiani, M., 390
Baek, J.-M., 502
Baenziger, P., S134, S191
Baeza-Montañez, L., S98
Bag, S., S10
Bagewadi, B., S10, S154
Bai, G., 468
Bai, Y., S72
Baier, K., S10
Bailey, D. J., 1169
Baillieul, F., 424
Bajwa, S., S31
Bakker, P., S165
Bakker, P. A. H. M., 404
Bala, K., S150, S153
Balakrishnan, N., S101
Balci, Y., S151
Baldwin, T., S147
Baldwin, T. T., S10
Balint-Kurti, P., 72, S11, S114
Balkcom, K. S., S16
Balla, B., S51
Banana. *See Musa* spp.
Bandyopadhyay, A., S11
Bandyopadhyay, R., S8, S117, S128, S162, S190
Banihashemi, Z., S85
Banu, S. P., S11
Bao, Y., 822
Barak, J., S47, S155, S168
Barash, I., 252, S22
Barbara, D., S64
Barber, B., 979
Barbetti, M., 551, S35, S39, S60
Barbosa, J. C., S11, S87
Bardsley, S. J., S11
Barham, J. D., S153
Baring, M. R., S204
Barley. *See Hordeum vulgare*
Barley net blotch, differentiation of *Pyrenophora teres* f. *teres* from *P. teres* f. *maculata* and, 1298
Barnes, J. S., S131
Barney, W., S126
Barooti, S., S83
Barouti, S., S84, S124
Barphagha, I., S47
Barrera, W., S12
Barros, N., S121
Barry, K. C., S160
Barthe, G. A., S86
Bartz, J., S33
Bartz, J. A., S12
Bar-Zvi, D., 271
Basart, J. P., S188
Bascur, G., S99
Basil. *See Ocimum* spp.
Baskin, D., S200
Bass, J., S103
Bassanezi, R., S200
Bassanezi, R. B., S74
Bastas, K., S12
Basu Thakur, P., S12
Bates, A. A., S53
Batson, W. E., S153
Batuman, O., S12
Batzer, J. C., 345, S15, S54, S112, S189
Baudoin, A. B., S12
Baughman, T. A., S204
Baum, T., S58, S141, S187
Baum, T. J., S116, S132, S179, S186, S187
Baumgartner, K., 708
Bautista, N., S89
Bayon, C., S12
Baysal-Gurel, F., S13, S20, S124
Bcl-2-associated athanogenes (BAG), in *Arabidopsis* and unfolded protein response, S58
BDM1 gene, *Fusarium graminearum* virulence and, S52
Bean. *See Phaseolus vulgaris*
Bean, mung. *See Vigna radiata*
Bean leaf beetle. *See Cerotoma trifurcata*
Bean leaf roll virus (BLRV), molecular characterization and ELISA-based detection of, S130
Bean pod mottle virus (BPMV)
in soybean, S123, S183, S205
vector systems from for exploration of soybean cyst nematode-plant interactions, S187
Beattie, A. C., S74
Beattie, G. A., S136
Beaudoin, N., 91
Beaulieu, C., 91
Becher, R., 444
Becker, J. O., S141
Becker, K., S158
Beckerman, J., S23, S69, S189
Beckerman, J. L., S168, S183
Bednarek, P., S158
Beer, S. V., S144
Beet curly top virus (BCTV), in bean, QTL responsible for resistance to, 972
Beet necrotic yellow vein virus (BNYVV)
evolution of for overcoming host resistance, S149
host effect on genetic diversification of single-plant populations, 1204
resistance-breaking variants of in nature, S2
in sugar beet, 127, S120
Beggarweed. *See Desmodium tortuosum*
Behlau, F., S13, S172
Behn, J. L., S182
Beirn, L. A., S13, S193
Bejarano, J. C., S13
Beladi, S., S13
Bélanger, R., S198
Bélanger, R. R., S196
Belasque, Jr., J., S11
Belcher, A., S114
Belcher, A. R., S14
Belknap, W. R., S101
Belonalaimus longicaudatus, *Pasteuria usgae* for control of, S199
Beltrán, C., S42
Beltrão, R., 199
Belzile, F., S196
Bemisia tabaci (tobacco whitefly), and *Cucurbit chlorotic yellows virus*, in cucumber and melon, 560
Ben Kalifa, H., S33
Ben-Daniel, B., 271
Benincasa hispida (winter gourd), evaluation of cover crops with, S133
Benlate, banana and, S170
Bennett, A., S167
Bennett, M. H., S70
Bennett, P. J., S33
Bennetzen, J., S40
Benomyl, for *Erysiphe necator*, resistance against, S12
Benson, M., S94, S102
Benson, M. M., S90
Bent, A. F., S26
Bentgrass, creeping. *See Agrostis stolonifera*
Bentley, C., S94
Benzimidazole
for *Botrytis cinerea* on rose, prevalence of resistance against, S62
for *Venturia inaequalis* on apple, molecular and mycelium assay for resistance, S189
Benzothiadiazole, for *Phytophthora infestans* on tomato, mechanisms of resistance, S147
Berberis spp., as alternate host for *Puccinia striiformis*, 432, Cover photo May
Berestecky, J. M., S98
Bergamin Filho, A., S11, S78, S200
Bergemann, S. E., 708
Berger, P. H., S156
Bermudagrass. *See Cynodon* spp.
Bernal, A., S8, S127
Bernal, A. J., S7, S21, S22, S29, S39, S86
Bernardes-de-Assis, J., 172
Berner, D. K., S64, S205
Bernier-English, V., S193
Berry, S. A., S189, S192
Berta, G., 805
Bérubé, M., S193
Bestor, N. R., S14, S182
Beta vulgaris (sugar beet)
Beet necrotic yellow vein virus in, 127, S120
causes of seedling damping-off in Michigan, S47
Fusarium spp. on, in Iran, S13
Heterodera schachtii on, S108, S136
Leuconostoc mesenteroides subsp. *dextranicum* on, S123
Rhizoctonia solani on
AG 2-2 isolate, S16
azoxystrobin for, S48, S102
cultivar selection for resistance, S123
temperature, moisture, and fungicide effects in managing, 689
soybean cyst nematode on roots of, S111
Betasatellite, *Tomato yellow leaf curl virus* and, S53
Betel nut. *See Areca catechu*
Bextine, B. R., S115, S116
Beyer, D., S164
Bhat, R. G., S115
Bhat, S., S142
Bhattacharyya, M. K., S80, S183
bHLH genes, and soybean cyst nematodes on *Arabidopsis thaliana*, S187
Bi, J., S118
Bi, Y., 1162
Bian, W., S60
Biasoli, M., 58

Bienapfl, J. C., S14
"Big Box" retail stores, overview of potted plant wholesale production business of, S161
Biggs, A. R., S56
Bigirimana, J., 262
Bilodeau, G., S14
Bindschedler, L., S56
Biochar, induction of systemic resistance by, 913
Biocontainment security, USDA-APHIS permitting and, S61
Biodisinfection, for control of *Fusarium oxysporum* f. sp. *dianthi* on carnation, S39
Bioenergy crops
  corn for ethanol production, *Fusarium* toxins in, S180
  Miscanthus × *giganteus*
    plant diseases in, S180
    potential viral threats to in United States, S3
    response to fungal pathogens, S17
  plant diseases in, S180, S181
  Pratylenchus spp. associated with, S74
  sorghum
    alteration of lignin biosynthesis and *Fusarium* spp., 631, S37
    disease and yield evaluation, S16
    plant diseases in, S180
  switchgrass
    improvement of root, microbe, and soil interactions for enhanced value of, S40
    plant diseases in, S180
    potential viral threats to in United States, S3
Biofilms
  lipopolysaccharide biosynthetic genes of *Xanthomonas axonopodis* pv. *citri* and, S71
  Xylella fastidiosa and, S28, S72
Bioherbicides, commercialization of, S162
Biological control
  of aflatoxin, partnerships for, S162
  Ampelomyces spp., for *Erisyphe necator*, S19
  Aureobasidium pullulans for brown rot blossom blight of sour cherry, S51
  Bacillus spp. for
    B. mojavensis surfactant, and antagonistic response to *Fusarium verticillioides*, S10
    induced systemic resistance and, S165
    B. mycoides, for *Fusarium* spp. on wheat, S87
    B. pumilus, for *Erwinia tracheiphila* on cucumber, S165
    B. subtilis: for *Fusarium solani* f. sp. *phaseoli*, S84; for gray mold on tomato and powdery mildew on cucumber, S70; induced systemic resistance and, S165; for *Rhizoctonia solani*, S65; soil application for disease control, yield improvement, and quality enhancement, S131; for *Verticillium dahliae* on cotton, S75
  Brassica spp.
    evaluation of greens of for nematode control, S123
    for *Phytophthora capsici* on cucurbits, S126, S142
  of brown rot on peach, integration of biofungicides and conventional fungicides, S195
  Burkholderia spp. and, identifying genes related to, S77
  challenges and successes of registration process, S162
  of *Choanephora cucurbitarum* on amaranth, in Nigeria, S9
  Chondrostereum purpureum, for control of woody invasive plant species, S102
  Colletotrichum gloeosporioides for, S162, S205
  of *Colletotrichum orbiculare* on cantaloupe, S35
  compost water extracts for control of *Phytophthora capsici* on pepper, 774
  Coniothyrium minitans, for *Sclerotinia sclerotiorum*, temperature and UV radiation and, S5
  of control of nematodes and soil-borne disease in vegetable production, S50
  DAPG, for pseudonomonads, S116
  of disease on tomato, S196
  effect of climate change on plant-pathogen-beneficial organism interactions and, S33
  essential oils for control of *Phytophthora capsici*, S60
  fish emulsion for potato scab suppression, S1
  Fusarium isolates, for control of bean broomrape and hemp broomrape, S34
  of *Fusarium* spp.
    on cucurbits, S18, S205
    F. oxysporum, S13, S129, S146
    F. solani, S84
  Gliocladium virens strain GL-21, for *Sclerotinia* spp. on lettuce, S91
  Gymnoascus reessii for control of root-knot nematode, S105
  Herbaspirillumn seropedicae and *Azospirillum brasiliense* for control of *Ustilago scitaminea*, S111
  herbicides for, SARRITOR and Collego, S162
  induced systemic resistance and, S165
  inhibition of *Aspergillus flavus* by *Pseudomonas* spp., and decreased airborne spore dispersal, 532
  of *Macrophomina phaseolina* on sunflower, in Pakistan, S128
  modeling efficacies of pathogens in relation to characteristics of biocontrol agent, 814
  mulch, bio-enhanced organic for control of nutsedges in tomato, S176
  Myrothecium verrucaria for, and effect of surfactants on conidial germination, S57
  of nematodes and soil borne diseases in fruiting vegetables, MeloCon WG and SoilGard 12G used as methyl bromide alternative, S200
  Pantoea vagans C9-1
    complete genome sequence of, S120
    for control of fire blight, 1330, S54, S59
  Pasteuria usgae, for control of *Belonalaimus longicaudatus*, S199
  of *Plasmodiophora brassicae* on canola, *Bacillus subtilis* and *Gliocladium catenulatum* for, S99
  poultry litter for control of *Sclerotium rolfsii*, S103
  of powdery mildew on cucurbits, S80
  of powdery mildew on zinnia, S74
  of *Pseudomonas solanacearum* and *Xanthomonas campestris* on tomato, S34
  Pseudomonas spp. for
    for control of *Gaeumannomyces graminis* var. *tritici* on wheat, S141
    P. fluorescens a506, for fire blight, 1330
    P.chlororaphis O6, induced systemic resistance and, bacterial determinants, S158
  Pseudozyma flocculosa for powdery mildews, mechanism of action, S198
  of *Ralstonia solanacearum* on ginger, screening for agents for, S141
  redefining paradigm of, S159
  Regalia, for control of cucumber powdery mildew and lettuce downy mildew, synergistic effect with other fungicides, S123
  of *Rhizoctonia solani* on rice, screening for agents for, S146
  of root-knot nematode on tomato in Egypt, S1
  S1Pf1Rif from *Pseudomonas putida* against chrysanthemum yellows phytoplasma infection of, 805
  of *Salsola tragus*, searching for fungal agents for, S64
  Simplicillium lanosoniveum, for control of *Phakopsora pachyrhizi* on soybean, S134
  of *Sphaerotheca xanthi* on squash, evaluation of agents for, S145
  Streptomyces lydicus for *Fusarium oxysporum* f. sp. *niveum* on watermelon, S51
  Synchytrium solstitiale for control of yellow starthistle, S34, S206
  Trichoderma spp.
    elicitor proteins and, S27
    T. harzianum, 1213, S60, S124
    overview of, S165
    in vitro evaluation against fungal trunk disease pathogens in Mexico, S101
  Ulvan, for *Colletotrichum gloeosporioides* on apple, S122
  using *Lysobacter enzymogenes*, S98
  of *Verticillium dahliae* on cotton, screening for agents for, S140
  of *Xanthomonas* spp. on tomato, evaluation of agents for, S145
  of *Xylella fastidiosa* on grapevine, S52
Biosecurity. *See* Food security
Bipolaris spp.
  on *Cordyline* spp., S125
  on rice, mapping genes for resistance to, S11
Bird, G., S185
Birren, B., S64
Bispyribac-sodium, for annual bluegrass control and brown patch in tall fescue, S28
Bittner, R. J., S14
Björkman, T., 1213
Black raspberry. *See Rubus occidentalis*
Black raspberry necrosis virus, thermotherapy for elimination of, S56
Black sigatoka. *See Mycosphaerella fijiensis* m.
Black vine weevil, on strawberry, evaluation of breeding lines for tolerance, S195
Black walnut. *See Juglans nigra*
Blackberry, *Marafivirus* sp. in, S112
Blackberry yellow vein associated virus (BYVaV), epidemiological studies on, S103
Black-faced leafhopper. *See Graminella nigrifrons*
Blaedow, R. A., 979
Blair, J. E., 732
Blaser, J. M., S15
Blazheva, D., S30
Block, C. C., S188
Blok, W., 593
Blomquist, C. L., S14
Blueberry. *See Vaccinium* spp.
Bluegrass. *See Poa* spp.
Bluhm, B., S142
Bluhm, B. H., S35, S52, S109, S120, S148
Blumeria graminis
  on barley, 21, S158
  type III secretion system of *Xanthomonas* for screening for effectors of, S56
  on wheat, oligogalacturonides and defenses induced in, 1352
BNYVV. *See Beet necrotic yellow vein virus*
Bock, C. H., 1030, S15
Bockelman, H., S65, S104
Bockus, W., 468
Bockus, W. W., S45
Bocsanczy, A., S15
Boehm, M. J., S33
Boerma, H. R., S61
Bogdanove, A., S56
Bogdanove, A. J., S159
Bohannon, R. C., S15, S143
Bohlmann, H., S117
Boland, G. J., S17
Bolton, M. D., 689, S102, S111
Bonasera, J. M., S144
Bond, J. P., S191
Bondalapati, K. D., S15
Bonde, M. R., S16

Bonman, J. M., 484, 511, S3, S45
Bonn, G., S116, S172
Bonnot, F., 300
Bonos, S. A., S193
Boonham, N., 143, S154
Boquet, D. J., S115
Bordovsky, J. P., S138
Borenshtein, M., 913, S33
Borges, B., S4
Borneman, J., S141
Bornstein, M., 97
Borth, W. B., S82
Boscalid
  for *Botrytis cinerea* on apple, S63, S143
  for *Didymella bryoniae*, S9, S201
  for *Penicillium expansum* on apple, S63
Bosco, D., 805
Bost, S. C., 345, S16
Bostock, R. M., 871, S25, S48, S53, S104, S141
Botermans, M., S81
Botryosphaeriaceae
  on olive and other hosts in Spain and California, 1340, Cover photo December
  on southern highbush blueberry, in Florida, S138
Botrytis cinerea
  on apple, S63, S143, S163
  and biochar, induction of systemic resistance against, 913
  on carrots, S65
  on cucumber, S70
  on grapevine, S49
  IVR gene and resistance against, 225, *400*
  on poinsettia, S128
  on pomegranate in Spain, S86
  reactive oxygen species, necrotrophy and, S151
  on rose, S62
  and signaling in plant host and generalist pathogens, S165
  on strawberry, S6, S134
  synergistic agents for, reduction of resistance and health risks, S61
  on tomato, S33, S70
Bottle gourd. *See Lagenaria siceraria*
Bottner-Parker, K. D., S69
Bouchard, J., S194
Boulay, M., 424
Bourgeois, G., S193
Bourget, N., S193
Bourland, F. M., S153
Boutanaev, A. M., S208
Bowden, R. L., 904, S41
Bowen, K. L., S16, S20, S128
Boyetchko, S. M., S99
Boyette, D., S162
Bradley, C., S137, S185
Bradley, C. A., S3, S104, S145, S182, S191
Bradley, J., S38
Brady, J., S16
Brady, J. A., S88
Bradysia impatiens (fungus gnats), transmission of *Pythium* in, 1307
Brancher, N., S99
Brannen, P. M., S16, S199
Bransby, D., S16
Brantner, J. R., S16
Brar, D. S., S11
Brar, H. K., S183
Brassica spp.
  as biological control agent
    B. alba as cover crop for management of *Phytophthora capsici* on cucurbits, S126
    evaluation of greens of for nematode control, S123
    for *Phytophthora capsici* on squash, S142
  B. juncea (canola)
    Albugo candida on, S60
    as cover crop for management of *Phytophthora capsici* on cucurbits, S126
    Leptosphaeria biglobosa and *Leptosphaeria maculans* on, S69
    recombinant antibody-mediated multiple disease tolerance in, S130
    Rhizoctonia solani on, S89
    Sclerotinia sclerotiorum on, S184
    seed meal amendment, S134
  Leptosphaeria maculans on, screening for resistant lines, S77
  B. napus (rapeseed)
    Plasmodiophora brassicae on, S99, S194
    Sclerotinia sclerotiorum on, inoculation methods for resistance screening, S18
  Plasmodiophora brassicae on, S59
  B. rapa (pak choy), *Plasmodiophora brassicae* on, S74, S117
  Sclerotinia sclerotiorum on, population study on Western Australian strains of, S39
  Xanthomonas campestris pv. *campestris* on, detection in seeds, S207
Brauer, K., S183
Braun, S. E., 1307
Braverman, M., S162
Breakspear, A., S75
Breathnach, J., S191
Bremer, D., S91
Bremia lactucae
  on lettuce, Revus and Forum for, rainfastness of, S66
  Regalia for control of, synergistic effect with other fungicides, S123
Brennan, J., S17
Brennan, J. M., S17
Brenneman, T., S199
Brenneman, T. B., S8, S199, S200
Brenneria rubrifaciens, on walnut, *rpo*N and, S80
Brewbaker, J. L., S98
Brewe, C., S108
Brewer, M. T., 1185
Brewster, W. K., S63
Brian, B. K., S2
Bricault, C., S99
Brière, S. C., S197
Britt, R., S58
Brlansky, R. H., 756, 1077, S42, S61, S107, S111, S143, S172
Brodal, G., S36
Broders, K. D., S17, S33
Bromley, R., 601
Bronstein, P. A., S160
Broome, J. C., S17
Broomrape. *See Orobanche* spp.
Brose, I. E., S188
Brown, D., S18
Brown, D. W., S18
Brown, J. K., S50, S53, S110, S138, S172
Brown, R. W., S82
Brown, T., S18
Browne, G. T., S115
Bruce, M., S157
Bruckart, W. L., S34, S206
Brueggeman, R., S43
Bruhn, J., 708
Brust, G. E., S18, S205
Bryan, B. K., 127, 1204
Buck, J., S116
Buell, C., S153
Buell, C. R., S127
Bull, C. T., 208, S79
Bunt, and *Tilletia* spp., survival of secondary sporidia of, 645
Burattini, M. N., 1042
Burbank, L., S85
Burelle, N., S19
Burkett-Cadena, M . S18
Burkholderia spp.
  B. andropogonis, *hrp* system and *pthA* and *pthB* from *Xanthomonas citri* in, S108
  B. cepacia complex, broad host rang tailocin from, S31
  B. contaminans, occidiofungin production by, *occ* gene cluster and, S44
  B. glumae
    novel regulatory genes for virulence factors, S47
    on rice, AiiA-mediated quorum-quenching and toxoflavin expression, S96
  identifying genes related to biological control of pathogens, S77
Burlakoti, P., S18
Burnham, A. M., S18
Burnquist, W. L., S78
Burr, T. J., S8
Bursaphelenchus xylophilus (pine wood rot nematode), surface coat proteins of, during host pine infection and in vitro culture, 1289
Burskey, C., S39
Bushnell, W. R., 33
Busman, M., S18
Butchko, R., S18
Butler, D. M., S19
Butler, D. N., S90
Byamukama, E., 931, S19, S183
Bylemans, D., S163
BYNVV. *See Beet necrotic yellow vein virus*
bZIP (basic leucine zipper proteins), in *Magnaporthe oryzae*, genome-wide functional analysis of, S65

CAA fungicides. *See* Carboxylic acid amide fungicides
Caasi, D., S7
Caasi, D. J., S19
Caasi, O. C., 415
Cabezas, L. F., S129
Cacao, *Moniliophthora perniciosa* on, S42
Cacciola, S. O., S76
Cadle-Davidson, L., 1240
Caenorhabditis elegans
  attraction of to brown garden snail, S27
  for screening bacterial toxins for nematicidal activity, S107
Caesar, A. J., S68
Caesar-TonThat, T., S68
Caetano-Anollés, G., S190
Caffi, T., 1321, S19, S194
Cahalane, G., S17
Cai, R., 208
Cai, X., S19
Calamondin. *See Citrofortunella microcarpa*
Calcium, *Phytophthora nicotianae* and, autoregulation of zoospore density-dependent behaviors, 632
Calderon, C., S19
Calibrachoa mottle virus (CbMV), infectious RNA transcripts from cloned cDNA of, S44
Caligari, P. D., S110
Calla, B., S106
Calle, J., S171
Callow, P. W., S83
Calmodulin, and soybean resistance against *Phytophthora sojae*, S107
Calvo-Velez, P., S20
Camacho, F., S29
Camargo, L. E., S21, S74
Camp, A. R., S20
Campa, A., 1315
Campbell, H. L., S20
Campbell, J. H., S199
Campbell, L., 689
Campbell-Nelson, K., S92
CANARY (Cellular Analysis and Notification of Antigen Risk and Yield) biosensors, S73
Candidatus Liberibacter spp.
  Ca. L. americanus
    colonization of *Cuscuta indecora* by, 756
    influence of temperature on Asian citrus

psyllid acquisition of, S11
on orange jasmine and citrus trees in Brazil, S74
Ca. L. asiaticus
bioinformatic analysis of genome strain sequence data for, S72
from citrus relatives, S107
colonization of *Cuscuta indecora* by, 756, Cover photo August
in commercial orchards in Puerto Rico, S34
development of conventional and recombinant antibody screens against, S143
Diaphorina citri and, spread through retail nurseries and garden centers, S46
distinction between Guangdong and Florida using genomic locus with short tandem repeats, 567
distribution in infected citrus trees, S172
and early events of huanglongbing at ultrastructural level, September
expression profiling host response to, S7
in Florida and China, tandem repeat numbers in populations, S24
identification of potential virulence genes in, S122
on orange jasmine and citrus trees in Brazil, S74
organization and structure of two prophage lysogens that become lytic in plant infections, S145
on periwinkle, bactericidal activities of antimicrobial molecules against, S145
salicylate hydroxylase of, S127
in salivary glands and alimentary canal of *Diaphorina citri*, S6
screening for molecules for control of in periwinkle, 230, Cover photo March
sequencing from cultivated cells, S116
SSR-based genetic analysis of isolates from multiple continents, S41
variation of prophage frequency in strains from different provinces in China, S73
Ca. L. psyllaurous, on potato, S203
Ca. L. solanacearum
and carrot psyllid on carrot, S88
new method for collection and detection of within host, S103
on potato, S50, S138, S203
on tomato, S173
zebra chip disease and, S135
on citrus, and Agilent GeneChip Array for gene expression profiling, S61
comparative analysis of reductive genome species, S29
development of primers and probes for real-time PCR detection of, S42
in *Diaphorina citri*, detection of, S77
extraction from plants and cultivated cells using pressure cycling technology, S114
new molecular diagnostic tool for quantitating and genotyping, S72
solving inconclusive quantitative PCR for, S66
Candidatus Phytoplasma spp.
Ca. P. asteris, and witches' broom and dwarfism, S52
Ca. P. mali, on apple
multiple infection by distinct strains and pathological relevance, 863
phloem cytochemical modification and gene expression after recovery from, 390
Ca. P. palmae-related strain and, Texas phoenix palm decline and, S175
Canola. *See Brassica juncea*
Cantaloupe. *See Cucumis melo*
Cantamessa, S., 805
Canteros, B. I., S13
Cantonwine, E. G., S200
Cao, C., S20
Cao, M., S105
Cape gooseberry. *See Physalis peruviana*
Capelluto, D. G., S158
Caprara, M., S21
Capsicum chlorosis virus (CaCV-Ph), from *Phalaenopsis* orchid, genome sequence of, S146
Capsicum spp. (pepper)
C. acutatum, *Colletotrichum acutatum* on, S71
C. annuum
Colletotrichum spp. on, S114
electrophoretic potyvirus transfection into protoplasts of, S130
Phytophthora capsici on, 774, S201
simultaneous detection of two cryptic viruses from, S112
Tomato spotted wilt virus in, in Taiwan, S53
Xanthomonas perforans on, S103
Enterobacter cloacae on, S53
Pepper golden mosaic virus in, viral DNA accumulation and, S50
Capsid protein
alteration of amino acid positions, *Cucumber mosaic virus* transmission and, S99
and *Turnip crinkle virus* systemic movement in *Arabidopsis*, S105
Caragea, P., S188
Carbendazim, for control of *Colletotrichum acutatum* on citrus, S118
Carbofuran, for control of root-knot nematode on tomato in Egypt, S1
Carbone, I., S85, S92, S94, S157
Carboxylic acid amide (CAA) fungicides, resistance of *Peronophythora litchii* against, 522
Cárdenas, M. E., S21, S22
Cardona, N., S171
Career opportunities after graduate school, S168, S169
Carisse, O., S194
Carlson, B., S21
Carnation, *Fusarium oxysporum* f. sp. *dianthi* on, soil biodisinfection for control of, S39
Carnes, M. E., S21, S106
Carpenter, D., S126
Carr, J., S70
Carr, J. P., S147
Carras, M. M., S208
Carrot. *See Daucus carota*
Carson, M., 432, S21
Carson, M. L., 484
Cartwright, K., S162
Cartwright, R., S145, S202
Cartwright, R. D., S22, S114
Caruano-Yzermans, A., S38
Carvalho, G., S21
Carver, T. L. W., 21
Carya illinoinensis (pecan), *Cladosporium caryigenum* on, S98
Casassa, L. F., S45
Cassava. *See Manihot esculenta*
Cassava frogskin disease, S5
Cassell, M. E., S205
Castanea spp. (chestnut)
Cryphonectria parasitica on
analysis of transgenic, S89
Cpkk1 and virulence, 1100
ectomycorrhizal colonization, S29
forest restoration and, S167
resistance against, S10
selection of transformed somatic embryos of, S91
Castillo, J. A., 208
Castillo, J. D., S21
Castlebury, L. A., S173
Castrillo, L. A., 1307
Castro, A., S110
Castroagudin, V. L., S22
Casuarina equisetifolia (ironwood), decline of in Guam, S82, S115
Caswell-Chen, E. P., S27, S113
Catal, M., 337
Catch crops, and sugar beet cyst nematode decline, S84
Catharanthus roseus (periwinkle)
Candidatus Liberibacter asiaticus on, 230, Cover photo March, S145
phytoplasma on, S127
Cating, R. A., S22, S174
Cattaneo, M. G., S136
Cattleya orchids, *Phytophthora cactorum* on prefinished liners from Thailand, S174
Cavin, C. A., S205
CBF transcription factor family, in *Fusarium verticillioides*, S109
c-di-GMP biosynthesis genes, of *Xylella fastidosa* virulence factors, S7
Celery. *See Apium graveolens*
Cell wall degrading enzymes, *Ustilago maydis snf1* gene as dual regulator of, 1364
Cellier, G., 1250
Cellobiose, and thaxtomin A production, by *Streptomyces scabies*, 91
Cellulase (*celA*) gene, *Clavibacter michiganensis* subsp. *michiganensis* on tomato, 252
Centaurea solstitialis (yellow starthistle), *Synchytrium solstitiale* for control of, S34, S206
Center, T. D., S108
Centipedegrass. *See Eremochloa ophiuroides*
Cepero de García, M. C., S42
Ceratocystis spp.
C. fagacearum, on red oaks, 979
C. fimbriata, on *Eucalyptus* spp. in Brazil, S35
Cercis canadensis (eastern redbud), redbud yellow ringspot disease and, S201
Cercospora spp.
C. arachidicola, on peanut, S105, S200
C. coffeicola, on coffee, S121
C. hydrangeae, on *Hydrangea macrophylla*, S84
C. kikuchii, on soybean, S22, S26
C. sojina, on soybean, S28, S145, S182
C. zeae-maydis, on corn, S117, S202
C. zeina, on maize, S117
Cercosporidium personatum, on peanut, S200
Cercosporin, from *Cercospora kikuchii* on soybean, S22
Cereal cyst nematodes, PCR for distinguishing *Heterodera filipjevi* and *H. avenae*, 216
Cereal yellow dwarf virus-RPV (CYDV-RPV), in oat, and aphid transmission, S100
Ceresini, P. C., 172
Cerotoma trifurcata (bean leaf beetle), and *Bean pod mottle virus* in soybean, S205
Certification programs
for cantaloupe, S35
for mushrooms, S164
for viruses, S135
Céspedes, M. C., S21, S22
Cha, J., S25
Chaetocnema pulicaria, *Pantoea stewartii* subsp. *stewartii* and, type III secretion system, S27
Chaijuckam, P., 502
Chaikam, V., S11
Chakrabarti, A., S75
Chakraborty, S., 1057
Chalupowicz, L., 252, S22
Chaluvadi, S., S40
Chamaecyparis lawsoniana (Port-Orford cedar), *Phytophthora lateralis* on, S167
Chambers, A. Y., S153
Champoiseau, P. G., S22, S173
Chanda, A. K., S22
Chandra-Shekara, A., S56
Chang, C., S199
Chang, P. S., S173
Chao, S., S104
Chapara, V., S183

Chapman, K., S189
Chapman, K. S., S23, S183
Charkowski, A., S19, S78
Charudattan, R., S176
Chatnaparat, T., S103
Chaudhary, P., S185
Chaudhury, A., S23
Chaves, A., S23
Chaves, G., S176
Chawla, S., S200
Chellemi, D. O., S57, S173
Chen, B., S24
Chen, C., S23, S30, S41, S53, S105, S146, S152
Chen, H., S90
Chen, J., 567, S24, S73, S119
Chen, K., S44
Chen, P., S70
Chen, R., S47
Chen, W. Q., 328
Chen, X., S53, S132
Chen, Y., S23, S46
Chen, Z., S22, S37, S39, S47, S64, S96, S164
Cheng, D. M., S72
Cheng, Y., S53
Cheong, E., S56
Cheong, K., S97
Cherry, ornamental flowering, leaf spot disease in, S84
Cherry, sweet. *See Prunus avium*
Chestnut. *See Castanea* spp.
Cheung, H. K., S24
Chi, M., S97
chiA genes, as marker for resistance against *Stenocarpella maydis*, S88
Chiampiriyakul, P., S121
Chickpea. *See Cicer arietinum*
Childers, A. C., S138
Chilling injury, in tomatoes exposed to low temperature in field, S12
Chintamanani, S., S11
Chitin
  and fungal resistance in *Arabidopsis*, S68
  Xylella fastidiosa virulence and transmission, S62
Chitinase
  from Douglas fir seedlings infected with *Phellinus sulphurascens*, 356
  modification of by protein from *Stenocarpella maydis*, 645
Chitrakar, R., S24
Chitrampalam, P., S24
Chittem, K., S25, S42
Chlorothalonil
  for *Cercosporidium personatum* on peanut, S200
  ELISA kits for analysis of residues on creeping bentgrass, S64
Cho, J., S25
Cho, Y., S25
Choanephora cucurbitarum, on amaranth in Nigeria, S9
Choi, D., S97
Choi, H.-K., 1089
Choi, J., S25, S97
Choi, Y., S25
Choiseul, J., S17
Chondrostereum purpureum, for control of woody invasive plant species, S102
Chong, J., 484, 511
Chorismate mutases, in *Xanthomonas oryzae* pv. *oryzae*, and rice virulence, 262
Chou, C., S25
Choudhary, N., S42, S111
CHROMOMETHYLASE 3 (*OsCMT3*), in RNA silencing mediated by geminivirus, S90
Chrysanthemum spp.
  bacterial microflora in roots and rhizosphere of, S18, S171
  Phytophthora spp. on, abscisic acid and salt-induced susceptibility, 871
Chrysanthemum yellows phytoplasma (CYP), in daisy, 805
Chuaboon, W., S103
Chuma, I., 436
Chung, K., S24
Chunxue, C., S159
Ciaffi, M., 390
Cibils Stewart, X., S26
Cicer arietinum (chickpea)
  Ascochyta rabiei on, penthiopyrad for, S125
  Fusarium oxysporum f. sp. *ciceri* on, genetic diversity of, in Iran, S46
Cilia, M., S100
Cisneros, F. M., S26, S184
Citrofortunella microcarpa (calamondin), *Xanthomonas anxonopodis* pv. *citri* on, S24
Citrullus lanatus (watermelon)
  Acidovorax avenae subsp. *citrulli* on, S148
  Colletotrichum orbiculare on, S146
  Didymella bryoniae on, S201
  Fusarium oxysporum f. sp. *niveum* on
    management with fungicides, S32
    resistance of triploid cultivars, S99
    Streptomyces lydicus and cover crop for management of, S51
    Vicia villosa cover crop for suppression of, S207
  Squash vein yellowing virus in, S134
  viruses in single and mixed infections of, 1194
Citrus spp.
  C. jambhiri (rough lemon), *Candidatus* Liberibacter on, S61
  C. paradisi (grapefruit)
    Elsinoë fawcetti on, S86
    Xanthomonas axonopodis on, S71
    Xanthomonas citri on, S15, S36, S116
  C. reticulata (tangerine), *Alternaria alternata* on, S6, S174
  C. sinensis (sweet orange)
    Candidatus Liberibacter on, S7, S61
    Colletotrichum acutatum on, S119
  Xanthomonas citri on, S37
  Xylella fastidiosa on, disease intensity and yield reduction, in Brazil, S41
Citrus tristeza virus (CTV)
  aphid transmitted subisolates, S111
  differentiation and identification of potential severe strains, 319
  screening global collection of isolates, 1077
Ciuffetti, L. M., S160
Civerolo, E., 567, S24
Civerolo, E. L., S30, S72
Cladosporium spp.
  C. caryigenum, on pecan, probability modeling, weather variables as inputs and, S98
  C. phlei, increasing carbon dioxide and sporulation of, S208
Clancey, M. S., S188
Clardy, J., S54
Clark, M. M., 493
Clark, W. D., S28
Clarke, B., S90
Clarke, B. B., S13, S109, S193, S197
Clarke, C. R., 208
Clavibacter michiganensis
  commercially available ELISA for subspecies, S187
  on potato, functional genetic analyses of, S124
  on tomato
    bacterial virulence and plant defense genes in infection, 252
    infection, biofilm formation, and epiphytic fitness, S22
    transmission during grafting, S13
    visualization using bioluminescent strain, S140
CLE effector proteins, *of Heterodera* spp.
  and perception in *Arabidopsis* roots, S108
  trafficking of in plant cells, S132
Cleistothecia, of *Podosphaera aphanis*, initiation, development, and survival of, 246
Clément, C., 424
Climate change
  Alternaria alternata and *Cladosporium phlei* sporulation and, S208
  food security and, S156
  impacts on plant pathogens, S179
  metamodels for scaling potato late blight risk and, S121
  potato late blight suppression and, S26
  tomato, pathogens, and biological control agents and, S33
  and tree dieback and decline in Maine, S195
Clinckemaillie, A., S26
Cloropicrin, for *Meloidogyne javanica* on carrot, S135
Clough, S. J., S106
Cloutier, S., S151
Clover, G. R. G., 1282
Clover, subterranean. *See Trifolium subterraneum*
Cobine, P. A., S29
Cochliobolus heterostrophus, on maize, S114
Cochliobolus sativus
  on barley, S110, S118
  MAPK genes in, S69
  on wheat, S45, S76
Cochliobolus victoriae. *See Helminthosporium victoriae*
Cochran, A., S93, S163
Cochran, K. A., S26
Cock, P. J., S80
Cocos nucifera (coconut), lethal yellowing disease of, in Mozambique, spatial and spatio-temporal pattern analysis of, 300
Coffee, *Cercospora coffeicola* on, cercosporin polyketide synthase, ABC transporter and, S121
Coffey, M. D., 732, S14, S76, S150
Cohen, S., 97, 798
Cohen-Kandli, M., 252, S22
Coles, N. D., 72
Collaboration, of USDA and FDA, S155
Collego, second commercialization of, S162
Colletotrichum spp.
  C. acutatum
    on blueberry, S83
    on *Capsicum acutatum*, S71
    on citrus, S86, S118
    on olive, S86
    on strawberry, S21
    on sweet orange, S119
  C. capsici, on chili pepper, S114
  C. cereale, on annual bluegrass, S109, S197
  C. coccodes
    on chili pepper, S114
    genetic diversity of vegetative compatibility groups, S182
    on potato, S93
    vegetative compatibility groups in subpopulations, 271
  C. fragariae, on strawberry, S75
  C. gloeosporioides
    on apple, S122
    for biological control, S162
    on blueberry nursery plants, S99
    on strawberry, S75, S106
    for tumbleweed, S205
  C. graminicola
    on maize, S19
    on sorghum, S16
    striatin ortholog of, S133
  C. orbiculare
    on cantaloupe, S35
    on cucumber, S174
    on watermelon, S146
  restriction-associated DNA tags for, S27
  on strawberry, screening for resistant lines, S83

C. sublineola, on centipedegrass, S126
Colletto, A., 58
Collins, D. J., S202
Collins, J., 33
ColS/ColR two-component system, and *Xanthomonas axonopodis* pv. *citri* virulence, S141
Colyer, P. D., S153
Comparative Fungal Genomics Platform, Fungal Expression Database and, S97
Competition, modeling of between viruses in complex plant-pathogen system, 1042
Compost water extracts, for control of *Phytophthora capsici* on pepper, 774
Comstock, J., S78
Comstock, J. C., S106, S173, S175
Comstock, J. P., S26
Conidiation, of *Fusarium verticillioides*, genes differentially expressed during, S18
Coniothyrium minitans, for control of *Sclerotinia sclerotiorum*, S5
Conley, S., S67
Conley, S. P., S186
Conner, A. J., 460
Consonni, C., S158
Container plant business, retail stores and, S161
Containment facilities, USDA-APHIS permitting and, S61
Conway, W., S58
Conway, W. S., 42, S56
Cook, D. E., S26
Cook, D. R., 1089, S105
Cooksey, D. A., S118
Cooley, D. R., 345, S195
Cools, H. J., S12, S49
Coop, L., S179
Cooper, G. T., S201
Coplin, D. L., S27, S184
Copper
Xanthomonas citri subsp. *citri* resistance, S13
for *Xanthomonas fragariae* on strawberry, S83
CorA transporter, *Erwinia carotovora* subsp. *carotovora* virulence and, S61
Coram, T., S53
Corcuff, R., S65
Cordgrass. *See Spartina alterniflora*
Cordyline spp., *Bipolaris* sp. on, S125
Corley, J., S126
Corn. *See Zea mays*
Cornus florida (dogwood), fine scale genetic structure of, S45
Coronatine
chloroplast reactive oxygen species and, S54
manipulation of host responses by, S91, S160
Correa, V. R., S27, S184
Correa-Victoria, F., 172
Correll, J., S53, S142, S145
Correll, J. C., S22, S35, S135
Cortez, A., S128
Corynespora cassiicola, on *Hydrangea macrophylla*, S84
Costa, C. R., S87
Cotes, A. M., S42
Cotes, J. M., S87
Cotton. *See* Gossypium spp.
Cotton, J. A., S27
Cotty, P. J., 150, S8, S39, S43, S55, S81, S103, S162
Courtois, J., 1352
Coutinho, F. A. B., 1042
Cover crops
for anaerobic soil disinfestation, in bell pepper/eggplant crop production, S19
Brassica spp. for management of *Phytophthora capsici* and *Fusarium* spp. in cucurbits, S190
for control of *Colletotrichum orbiculare* on watermelon, S146
evaluating for cucumber and winter gourd, S133
for management of *Fusarium oxysporum* f. sp. *niveum* on watermelon, S51
Vicia villosa, for suppression of *Fusarium oxysporum* f. sp. *niveum* on watermelon, S207
Cover photos
Berberis spp. as alternate host for *Puccinia striiformis*, May
deoxynivalenol and barley, chloroplast pigments in leaf tissues, January
dodder infected with *Candidatus* Liberibacter asiaticus, August
early events of huanglongbing at ultrastructural level, September
escudete lesion on olive, *Botryosphaeria dothidea* and, December
Fusarium mexicanum on mango, mango malformation disease and, November
Fusarium spp. in wheat, cytochrome p450 gene activation and resistance, February
genetic variability of natural populations of *Grapevine leafroll-associated virus 2* in Pacific Northwest vineyards, July
Phytophthora capsici on tomato, June
Rhabdocline spp. on Douglas fir variety Shuswap, April
screening periwinkle for molecules for control of *Candidatus* Liberibacter asiaticus, March
Xylella fastidiosa on grape, Pierce's disease and, October
Covert, S., S59
Cowger, C., 719, S144, S204
Cowles, R. S., S195
Cowpea, viruses in, effect of multiple infections on seed transmission in, S92
Cox, K., S27, S50
Cpkk1, *Cryphonectria parasitica* on chestnut, virulence and, 1100
Cranberry. *See Vaccinium oxycoccos*
Craven, K., S40
Cregan, P., S189
Cregan, P. B., S61
Creswell, T., S69
Crinivirus spp., *Cucurbit chlorotic yellows virus*, in cucumber and melon, 560
Cronartium ribicola
on *Ribes missouriense*, causes of seasonal fluctuations in severity, 986
on western white pine, and resistance, S120
on whitebark pine, forest restoration and, S166
Crotalaria juncea (sunn hemp), *Golovinomyces cichoracearum* on, S174
Crouch, J., S13, S27, S101, S156, S193
Crow, J., S116
Crull, L., 897
Crutcher, F. K., S27
Cruz, L., S28
Cruz, L. C., S29
Cruz, L. F., S21
Cry proteins, in corn, for pest management, S183
Cryo-electron microscopy, for studies of filamentous plant viruses, S60
Cryphonectria parasitica, on chestnut, 1100, S10, S29, S89, S167
Csinos, A., S28, S55
Csinos, A. S., S57, S142
Cucumber. *See Cucumis sativus*
Cucumber green mottle mosaic virus (CGMMV), in cucumber, transmission by pollen, S72
Cucumber mosaic virus (CMV)
2b RNA silencing suppressor of, S70
atomic model of, S99
in *Gladiolus* spp., S59
nitrocellulose membranes as solid matrix for immunodetection and subgroup identification, S173
in tobacco, S147
Cucumis spp.
Acidovorax avenae subsp. *citrulli* on, survival in stored seeds, S200
Erwinia tracheiphila on, assessing genetic diversity of, S112
evaluation of cover crops with, S133
Fusarium spp. on
Ascophyllum nodosum extract and silicon for, S205
Brassica spp. short-cycle cover crops for management of, S190
F. solani, commercial extracts from *Ascophyllum nodosum* for control of, S18
management of powdery mildew on with biopesticides, S80
C. melo (melon)
Colletotrichum orbiculare on, S35
Cucurbit chlorotic yellows virus in, 560
Cucurbit yellow stunting disorder virus in, S138
Erwinia tracheiphila on, S26, S112, S189
Fusarium oxysporum on, 682
Monosporascus cannonballus and *Olpidium bornovanus* interactions and, S122
new potyvirus infecting in California, S12
Podosphaera xanthii on, S79
Pseudoperonospora cubensis on, S202
Meloidogyne incognita on, identifying and characterizing resistance to, S35
multiple viruses in single and mixed infections of, 1194
Phytophthora capsici on
baseline sensitivity to fluopicolide, S201
Brassica spp. short-cycle cover crops for management of, S190
mustard cover crop for management of, S126
sensitivity to dimethomorph, cymoxanil, and mefenoxam, S195
variability in ability of isolates to cause disease, S34
Podosphaera xanthii on, in Florida, S40
Pseudoperonospora cubensis on
concentration of airborne sporangia, influence of environment on, S43
effect of temperature and wetness duration on sporulation rate of, S89
review of fungicides for management of downy mildew, 1066
C. sativus (cucumber)
Bacillus pumilus strain INR-7 for control of *Erwinia tracheiphila* on, S165
Colletotrichum orbiculare on, S174
Cucumber green mottle mosaic virus in, S72
Cucurbit chlorotic yellows virus in, 560
Fusarium oxysporum f. sp. *radiciscucumerinum* on, S95
Melon necrotic spot virus in, S69, S191
Phytophthora spp. on, S43, S133
Pseudoperonospora cubensis on, 97
viruses infecting in Oklahoma, S4
Watermelon mosaic virus in, 1373
Zucchini lethal chlorosis virus in, S87
Cucurbit chlorotic yellows virus (CCYV), in cucumber and melon, 560
Cucurbit leaf crumple virus (CuLCrV)
in snap bean in Georgia, S68
in watermelon, in single and mixed infections, 1194
Cucurbit yellow stunting disorder virus (CYSDV)
in melon, in California and Arizona, S138
in watermelon, in single and mixed infections, 1194
Cucurbita spp.
C. pepo (squash)
Phytophthora capsici on, S142
Sphaerotheca xanthi on, S145
Podosphaera xanthii on, S139
root knot nematodes on, S31
as rootstock for watermelons, *Podosphaera xanthii* on, S60

Xanthomonas campestris pv. *cucurbitae* on, S108
Cuellar, A., S5
Culbreath, A., S105
Culbreath, A. K., S105, S200
CuLCrV. *See Cucurbit leaf crumple virus*
Cummins, D., S17
Cunniffe, N. J., 638
Cuomo, C., S64, S75, S156
Curly top virus (CTV), in bean, QTL responsible for resistance to, 972
Curry, A., S134
Curry, K. J., S83, S134
Curtis, M., S104
Curtoviruses, in leafy greens in Arizona, S89
Curvularia lunata, on sorghum, viability staining using tetrazolium violet, S90
Cuscuta indecora, colonization of by *Ca.* L. asiaticus and *Ca.* L. americanus, 756, Cover photo August
Cusicanqui, J., S41
Cuticle, in basal and induced defense against bacterial and fungal pathogens, S139
Cutulle, M. A., S28, S80, S152, S205, S208
Cyazofamid, *Pythium aphanidermatum*, hormesis and, S36
Cyclins, in *Mycosphaerella graminicola*, S25
Cylindrocladium spp.
on banana, silicon for control of, S58
on peanut, Propulse for control of, S100
Cymoxanil, for *Phytophthora capsici* on cucurbits, S195
Cynodon spp. (bermudagrass)
Exserohilum sp. on, S57
Ophiosphaerella spp. on, 415, S131
Rhizoctonia spp. on, S152
CYP. *See* Chrysanthemum yellows phytoplasma
CYP51C gene
from *Fusarium* spp., for phylogenetic analysis, S35
of *Sclerotinia homoeocarpa*, demethylation inhibitor fungicide resistance and, S75
Cyperus spp. (nutsedges), on tomato, bio-enhanced organic mulches for, S176
CYSDV. *See Cucurbit yellow stunting disorder virus*
Cyst nematodes. *See Heterodera* spp.
Cytochrome b gene (*cytb*)
and *Botrytis cinerea* resistance to pyraclostrobin, S143
in *Podosphaera clandestina*, QoI fungicide resistance and, S73
Cytokinin biosynthesis, and pathogenesis of *Ustilago maydis* on corn, S87
Czajkowski, R., 134, 1128
Czosnek, H., 225

da Graça, J. V., S66
da Silva, M. P., S28, S184
da Silva, R., S11
Daane, K., S119
Daane, K. M., 830
Dabala, R. R., S28
Dactylella oviparasitica, from *Heterodera schachtii*-suppressive soil, S141
D'Agostino, G., 805
Dahlia variabilis, caulimoviruses associated with, S5
Dai, W. D., S18
Daisy, S1Pf1Rif from *Pseudomonas putida*, against chrysanthemum yellows phytoplasma infection, 805
Dalchau, N., S70
Dally, E. L., S29, S206
Damann, K. E., S28, S124
Damayanti, T. A., S101
D'Amelio, R., 805
D'Amico, K. M., S29
Damsteegt, V. D., S42, S111, S209
Danchok, R. S., S120
Dang, F. J., 183
Dangott, L. J., S27
Danies, G., S7, S29
DAPG
for biological control of pseudomonads, S116 and *Phialophora* spp., 404
Daros, E., S111
Databases, Microbial Rosetta Stone (MRS) Central, S59
Datnoff, L., S52
Datnoff, L. E., S36, S174
Datura stramonium (datura), complementation between viruses in, S10
Daub, M., S136
Daub, M. E., S121
Daubert, S., S3, S5
Daucus carota (carrot)
Candidatus Liberibacter solanacearum and carrot psyllid, S88
Meloidogyne javanica on, S135
Sclerotinia sclerotiorum on, S100
UV-C induced disease resistance and phytoalexin accumulation in, S65
Xanthomonas hortorum pv. *carotae* on, S139
Daughtrey, M. L., 1307, S90
David, D. R., 913
Davidovitz, M., 798
Davidson, R. M., S157, S164
Davis, E., S141
Davis, E. L., S116, S132, S186
Davis, M., S164
Davis, R. E., S29, S69, S135, S206, S207, S208
Davis, R. F., S202
Davis, R. M., 502, 1222, S53, S153
Davis, T. M., S77
Dawson, W. O., S56, S154
Daylily, *Puccinia hemeroca* on, effect of light, S31
de Afonseca Lourenço, S., S119
de Boer, S. H., S70
de Boer, W. J., 134, 1128
de Cara, M., S29, S39, S95
de Cock, A. W., S150, S153
de Faria, R. S., S21
de Figueiredo, P., S7
de Franqueville, H., 300
de Jonge, R., S64
de la Cerda, K. A., S152
De La Fuente, L., S28, S29, S97
de Sá, P. B., 880, 890
de Silva, A., S98
de Silva, A. S., S78, S96
de Souza, S. R., S111
Deah, K. L., S52
Deahl, K., S161
Deb, D., S158
Dedeurwaerder, G., S26
Dee, M. M., S131
Degaetano, A. T., S26
Degrassi, G., 262
Deising, H. B., 444
Del Castillo, J. M., S29
Del Ponte, E. M., S121
del Río, L. E., S77, S184, S189
del Río, M., S86
del Rio Mendoza, L. E., S18, S89
Delaney, M. A., S30
Delfosse, P., S32, S76
Delgado, J. A., 290
Delic, D., S81
Delvaux, B., S58
Demangeat, G., 384
Demethylation inhibitor fungicides
for *Cercospora arachidicola*, resistance to, S105
for *Sclerotinia homoeocarpa*, effect on population structure, S197
Dendroctonus ponderosae (mountain pine beetle), on whitebark pine, forest restoration and, S166
Deng, X., 567, S24, S73
Deng, Y., S49
Denny, T., S199
Denny, T. P., S45
Deoxynivalenol
and barley, 33, Cover photo January, S15
in corn for ethanol production, S180
Fusarium asiaticum on barley and, 328
Fusarium graminearum on wheat and
of 3ADON population vs. 15ADON population, 1007, S4
accumulation of DON during grain development, 763
correlation with disease severity, S186
evaluation of cultivars for resistance, S186
glyphosate and, S193
and late *Gibberella zeae* infection in winter wheat, 719
resistance of wheat against, S50
in small grain, integrated management strategies for, S137
DeRobertis, C., S28
Derr, J., S28, S205
Desbiez, C., 1373
Desmodium tortuosum (beggarweed), *Phakopsora pachyrhizi* on, in Alabama, S29
Detweiler, A. J., S206
Devescovi, G., 262
Devorshak, C., S156
Dewdney, M. M., S85, S86, S130, S174
Dewey, R. L., S37
Dhawan, R., S11
Dhingra, A., S142
Diagnosticians, overview of, S168
Diaphorina citri (Asian citrus psyllid)
and *Ca.* Liberibacter spp.
Ca. L. americanus, influence of temperature on acquisition, S11
Ca. L. asiaticus: in salivary glands and alimentary canal of, S6; spread through retail nurseries and garden centers, S46
detection of, S77
on orange jasmine and citrus trees in Brazil, S74
Diaz Arias, M. M., S30
Dickeya sp.
with GFP, colonization of potato plants by, 134
on *Phalaenopsis* orchids, S22
on pineapple, S78, S98
on potato, 134, 1128
type III secretion system of, S144
Dickinson, M. J., 143
Dicklow, B., S32
Dickman, M., S58, S160
Didymella bryoniae
on cucurbits, boscalid resistance, S201
fungicide resistance in, iron sulphur gene (*DbSDHB*) and, S9
sensitivity to DMI and carboxamide fungicides, S126
Difenoconazole, for *Colletotrichum coccodes* on potato, S93
Dihydroorotase dehydrogenase, from *Phytophthora infestans*, S39
DiLeo, M. V., 871, S104
Dillard, H. R., S20
Dill-Macky, R., 80
Dimethomorph, for *Phytophthora* spp., S90, S195
Ding, Y., S206, S207
Dingus, B., S208
Diodia virginiana, criniviruses on, S128
Dion, Y., S193
Disease management, challenges and constraints on new strategies for, S95
Disease severity, Horsfall-Barratt scale, for hypothesis testing, 1030
Distillers wet grains, microbial characterization of, S181

Divo de Sesar, M., S99
DNA barcoding, *Pythium* spp. and, S153
DNA-2 satellite, *Tomato yellow leaf curl virus* and, S53
Dobhal, S., S30
Dobinson, K. F., S64
Doddapaneni, H., S30
Dodder (*Cuscuta indecora*), colonization of by *Ca.* L. asiaticus and *Ca.* L. americanus, 756
Dodds, P., S75
Dodge, S., S136
Dodine
  for *Cercosporidium personatum* on peanut, S200
  for *Venturia inaequalis* on apple, S27
Dogwood. *See Cornus florida*
Dolezal, W. E., S98, S181
Domier, L. L., S71
Donahoo, R., S52
Donahoo, R. S., S30
Donald, P., S30
Dong, H., 573
Dong, W., S31
Donofrio, N. M., S66, S207
Doraiswamy, V., S54
Dorel, M., S58
Dorrance, A., S185
Dorrance, A. E., S33, S39, S123, S184, S189, S190, S191, S192
dos Santos, J., S121
Dossey, S., S53
Dothistroma spp.
  D. pini, PCR for detection of in pine, 105
  D. septosporum
    on lodgepole pine, climate and, S132
    PCR for detection of in pine, 105
Dou, D., S158
Doubledee, M., S31
Douglas fir. *See Pseudotsuga menziesii*
Douhan, G. W., S152
Doustseddigh, H., S31
Dowell, F., S134
Drake, J., S77
Draper, M. A., S161, S191
Dreaden, T. J., S176
Drechslera tritici-repentis, on wheat in Norway, S36
Drennan, J. L., S147
Driver, J. G., S31
Dror, O., 252, S22
Drought stress, and morphological and physiological alteration of corn root structures, S57
Druffel, K. L., S5, S130
Dry, I. B., 1240
du Toit, L., S53, S142
du Toit, L. J., S169
Duan, J., 805
Duan, Y., S30, S41, S145
Duan, Y. P., 239
Duarte, I., S31
DuBose, V. B., S60
Duffy, B., S54, S59, S120
Duffy, S., S149
Dugan, D., S39
Dumenyo, C. K., S61
Dumonceaux, T., S69
Dung, J. K., S31
Duniway, J. M., 871
Dunkle, R. L., S155
Durand, R., 1352
Dutt, M., S86
Dutta, B., S148, S200
Duveiller, E., 474, S156
Duvivier, M., S26
Duyme, F., 1352
Dyer, A. T., 97, S87

EagleView software, for evaluation of SNPs in *Sirococcus clavigignenti-juglandacearum*, S17
Eastwell, K., S130
Echeverrigaray, S., 199
Echinacea purpurea, endophytes of, and production of natural products, S44
Eckstein, B., S11
Edge factor, and *Candidatus* Liberbacter solanacearum on potato, S138
EDS1 gene, for defense of grapevine against *Erysiphe necator*, S38
Edwards, M. C., 1298
Effector proteins
  AvrBs3 effectors, *Xanthomonas oryzae* pv. *oryzae* and, S159
  and broad-spectrum against oomycetes and fungi, S158
  of cyst nematodes
    mode of action, S179
    modulation of plant molecular processes and, S186
    and perception in *Arabidopsis* roots, S108
    trafficking of in plant cells, S132
  Fungal Secretome Database for identification of, S25
Egel, D. S., S32
Egestion-Salivation Hypothesis, S9
Eggenberger, A., S187
Eggertson, Q. A., S153
Eghbalian, F., S32
Eichenlaub, R., 252, S22
Eisenback, J. D., S32, S206
Ekramoddoullah, A. K. M., 356
El Jarroudi, M., S32, S76
Elad, Y., 97, 225, 913, S33
Elafifi, S., S33
Elateek, S. Y., S33
Elegbede, C. F., 1262
Elen, O., S36
Elena, S. F., S149
El-Habbak, M., S107, S119
Elicitor proteins, *Trichoderma virens* SM3 and, biological control and, S27
ELISA kits
  for chlorothalonil and iprodione residues on creeping bentgrass, S64
  for *Pea enation mosaic virus*, S130
  for *Squash vein yellowing virus* on watermelon, S134
  for subspecies of *Clavibacter michiganensis*, S187
Elkahky, M., S12, S33
Elliot, M. L., S175
Ellis, J., S75
Ellis, M. A., 345, S6
Ellis, M. L., S33, S184
Ellis, S. D., S33
Ellor, T., S164
Elmazaty, M., S33
Elmer, W. H., S195
El-Sheshtawi, M., S33
Elsinoë fawcetti, on grapefruit, resistance and, S86
El-Tarabily, K. A., S34
Emaravirus spp., Rose rosette-associated virus and Redbud yellow ringspot-associated virus, S67
Emerging pathogens, diagnostics and, S175
Emery, R., S87
Endophytic bacteria
  Bacillus cereus, vs. strains causing foodborne illness, S82
  Benlate and, S170
  of *Echinacea purpurea*, and production of natural products, S44
  production of antimicrobial compounds by, S38
Endotoxins, of *Bacillus cereus*, vs. endophytic strains, S82
Engels, R., S64
English, J. T., 1111, S43
Enis, J. N., 415
Enoyl reductase, of *Alternaria alternata*, and pathogenicity, 120
Ensley, S. M., S109
Enterobacter cloacae, on onion, pathogenicity determinants of, S53
Enzenbacher, T. B., S34
EPA
  evaluation of antibiotic uses, FIFRA and, S166
  overview of, S168
Epidemics, interactions between pattern, process, and scale in, S120
Eradication zone, optimal, and landscape pattern, invading epidemics and, 632
Eremochloa ophiuroides (centipedegrass), *Colletotrichum sublineola* on, S126
Ermacora, P., 390
Errata
  vol. 100(3):225-229, 2010, *400*
  vol 99(8):951-956, 2009, *204*
Erwinia spp.
  E. amylovora
    on apple, 532, S12, S68
    HrpL regulon of, S80
    kasugamycin and, S166
    molecular signature of differential virulence in natural isolates of, 192
    RcsC sensor kinase of, S133
  E. tracheiphila
    on cucumber, S165
    on cucurbits, S112
    on muskmelon, S26, S112, S189
Erysiphe necator
  benomyl for, resistance against, S12
  from different *Vitis* spp. and geographic origins, variation in pathogenicity and aggressiveness, 1185
  dynamics of ascospore maturation and discharge in, 1321
  on grapevine
    density-dependent latency of, S38
    EDS1 as component of defense against, S38
    effect of acute low-temperature events on, 1240
    environmental conditions and primary infection in Michigan, S9
    new biocontrol strategy for, S19
    new fungicides for control of, S136
    Quinone outside Inhibitors for, and resistance, S9
  Gubler-Thomas grape powdery mildew risk index and, revising high temperature threshold for, S17
  honeybee proboscis extension reflex as biological sensor for, S124
  seasonal ascospore release by, S88
Esca-related pathogenic fungi, in grapevine, early events prior to visual symptoms, 424
Escudete lesion on olive, and *Botryosphaeriaceae* collected from in Spain and California, 1340, Cover photo December
Eskandari, F. M., S34, S206
Esker, P., S67, S185
Esker, P. D., S34, S79, S119, S186, S188
Eskridge, K., S147
Esmenjaud, D., 384
Esquivel, J., S127
Essential oils
  for control of *Phytophthora capsici*, S60
  from *Monarda* spp., for control of *Rhizoctonia solani* on tomato, 493
Estevez De Jensen, C., S34
Ethylene
  Fusarium oxysporum on melon and, 682
  and *Magnaporthe oryzae* on rice, S49, S146
  plant immunity and, S160
Eucalyptus spp., *Ceratocystis fimbriata* on, in

Brazil, bacterial communities associated with, S35
Eugenia koolauensis, *Puccinia psidii* on, in Hawaii, protecting from further losses, S128
Eujayl, I. A., S123
Eutypa lata, host range, biological variation, phylogenetic diversity of in California, 1048
Evans, T. A., S66, S207
Eversole, K., S167
Everts, K., S32, S51, S99, S207
Everts, K. L., S146
Exner, C., S184
Exotic plant pathogens, landscape pattern and optimal eradication zone, 632
Expression vectors, *Tomato bushy stunt virus*-based, S76
Exserohilum sp., on bermudagrass and zoysiagrass in Texas, S57
Extension jobs, overview of, S168, S169
Extracytoplasmic function (ECF) sigma (s) factors, in *Pseudomonas syringae pv. syringae*, S12
Eyles, A., 460

F. oxysporum f. sp. *gladioli*, *Agrobacterium*-mediated transformation of, S67
Fabre, B., 105
FAD3, in soybean, and defense-related physiology, S119
Faghihi, J., S185
Fagus grandifolia, climate change and tree dieback and decline in Maine, S195
Fairy ring, in cranberry, control strategies for, S94
Fajolu, O. L., S131
Fallow period, influence of on soil microbial communities in Bolivian highlands, S41
Fan, J., S61
Fang, X. L., S35
Fang, Z. D., 1111
Faris, J. D., S151
Farley, L., S39
Farman, M. L., 890
Farnsworth, J. L., S40
Farrell, J. D., S184
Farrokhi Nejad, R., S113
Faske, J., S16
Faske, T., S16, S35
Fatokun, C. A., S92
Fauquet, C. M., S10, S154
Faust, J. E., S128
Fazekas, M., S51
Fei, S., S184
Feliciano-Rivera, M., S35
Felise, H. B., S160
Fellers, J., S151
Feng, C., S35, S53, S72, S139, S145
Feng, J., 328
Fern, leatherleaf. *See Rumohra adiantiformis*
Fern distortion syndrome
  endophytic bacteria, Benlate and, S170
  fluorescent pseudomonads and, S63
Fernández-Muñoz, R., 582
Fernandez-Ortuno, D., S35
Fernández-Pavía, S., 1176
Ferrandino, F., 1030
Ferreira, A., S35, S77
Ferreira, J. J., 1315
Fertilizers, for blueberry and grapes, phosphoric acid generation and, S16
Fessehaie, A., S36, S80
Festuca arundinacea (tall fescue), *Rhizoctonia solani* on, S80, S205
Fetters, T., S208
Ficke, A., S36
Ficus benjamina (weeping fig), crown gall in commercial propagation of, S127
FIFRA, evaluation of antibiotic uses by EPA and, S166
Fig. *See Ficus* spp.
Figeys, D., 848
Figueiredo, J., S36
Figueroa Betts, M., S160
Fijivirus sp., in rice, in China, S146
Filho, A. B., S87
Fillippeli, E., S201
Fique. *See Furcraea* spp.
Fir, Douglas. *See Pseudotsuga menziesii*
Fischer, K., S10, S154
Fischer, K. F., S154
Fish emulsion (FE), on potato, for scab suppression and tuber yield, S1
Fisher, J., S39
Fisher, T. W., S88
Fitzpatrick, B. M., S45
Fjellstrom, R., S202
Flavonoids, *Grapevine leafroll-associated virus-3* in grape and, S45
Fleites, L. A., S111
Fletcher, J., S18, S59, S110, S155
FlgB mutation, in *Xanthomonas axonopodis* pv. *glycines*, on soybean, reduced disease and, S8
Flor, N. C., S36
Flores, F., S7, S36
Florida torreya. *See Torreya taxifolia*
Floyd, C. M., S66
Fludioxonil
  for *Penicillium digitatum*, 738
  for *Penicillium expansum*, S2, S93
Fluensulfone, for root knot nematodes on tobacco, S28
Fluopicolide, for *Phytophthora capsici* on peppers and cucurbits, baseline sensitivity, S201
Fluopyram
  for control of *Plasmopara viticola* and *Erysiphe necator* on grape, S136
  for cylindrocladium black rot of peanut, S100
  Luna fungicides and, S37
Flutriafol, for *Phymatotrichopsis omnivora* on cotton, S54
Foliage trimming, for management of *Sclerotinia sclerotiorum* on carrot, S100
Folimonova, S. Y., 949
Fontaine, F., 424
Food and Agriculture Defense Initiative, National Plant Diagnostic Network and, S177
Food security
  climate change and, S179
  overview of, S156
  threats to agriculture in north central U.S., S181
Foote, P., S123
Forbes, G., S121, S156
Forest ecosystem restoration, S166
Forkhead-box protein, in *Magnaporthe oryzae*, S97
Formento, N., 58
Forouhar, F., S77
Forster, H., S2, S163, S166
Förster, H., 738
Fortnum, B. A., S100
Fortunato, A. A., S96
Fortunella spp. (kumquat), *Xanthomonas anxonopodis* pv. *citri* on, S24
Forum, for *Bremia lactucae* on lettuce, rainfastness of, S66
Foster, B., S162
Fought, L., S37
Fountain, J. C., S37
Fourrier, C., 105
14-3-3 protein, of tomato, and immunity-associated programmed cell death, S92
Fox, G. M., S196
Fraaije, B. A., S12, S35, S49, S51
Fraaije, M. W., S12
Fraedrich, S. W., 1118
Fragaria spp. (strawberry)
  F. x ananassa
    Botrytis cinerea on, S6
    Colletotrichum spp. on, S21, S75, S83, S106
    fungal and oomycete pathogens of in Western Australia, S35
    Podosphaera aphanis on, 246, S8
    Xanthomonas fragariae on, S64, S83
  Botrytis cinerea on, S134
  F. chiloensis (Chilean native strawberry), *Strawberry mild yellow edge virus* in ecotypes of, S110
  disease management in Philippines, S130
  Podosphaera aphanis on, S194
  Rhizoctonia fragariae and black vine weevil on, S195
  Verticillium dahliae on, S193
  Xanthomonas fragariae on, S174
Fragoso, R. B., S111
Francis, D. M., S20
Francis, M. I., S37
Franco, B., S87
Franco, S., S13
Franco-Lara, L., S176
Frank, M., S37
Frankliniella spp.
  feeding behavior of, and *Tomato spotted wilt virus* infection, S122
  as vector for *Iris yellow spot virus*, S122
Frantz, G., S134
Frantz, J., S144
Frantz, J. M., S74
Frare, G. F., S74
Fraxinus nigra, climate change and tree dieback and decline in Maine, S195
Frederick, R. D., S37, S61
Freeman, S., 1176
Freeman, T. P., 279
Frei, U., S184
French, R., 230, S125, S149
French-Monar, R. D., S173
Frenkel, O., 1185
Frey, J. E., S120
Frey, P., 105
Friesen, T., S151
Friesen, T. L., 1298, S144, S151
Fry, J., S91
Fry, W., S77
Fry, W. E., S20, S26, S52
Fsr1-interacting proteins, *Fusarium verticillioides* virulence and, S62
FST1 gene, of *Fusarium verticillioides*, functional characterization, S62
Fu, Y., S145
Fuchs, M., 384, S93
Fudal, I., S158
Fukuda, S. K., S82
Fukumoto, T., 85, 120
Fulbright, D. W., 337
Fulton, J., S86
Fumonisin, and *Fusarium verticillioides* on maize, S147
Fungal Expression Database (FEDB), overview of, S97
Fungal Genetics Stock Center, overview of, S80
Fungal Secretome Database, for identification of effector proteins in plant pathogenic fungi, S25
Fungi, sequence-based identification of, promise and pitfalls of, 732
Fungicides
  adjuvant, performance assessment and, S142
  for *Alternaria alternata*, resistance against, S14, S130
  ametoctradin, oomycete-specific, S63
  azoxystrobin, for *Rhizoctonia solani* on sugar beet, S102
  benlate, fern distortion syndrome and, S170
  benomyl, for *Erysiphe necator*, resistance against, S12
  benzimidazole
    for *Botrytis cinerea* on rose, S62

for *Venturia inaequalis* on apple, S189
for blueberry and grapes, phosphoric acid generation and, S16
boscalid
for *Botrytis cinerea* on apple, S63, S143
for *Didymella bryoniae*, S9, S201
for *Penicillium expansum* on apple, S63
for *Botrytis cinerea*
stability and fitness of resistant phenotypes, S63
on strawberry, S6
for brown rot on peach, S195
carboxylic acid amide, 522
for *Cercospora arachidicola*, resistance to, S105
for *Cercospora sojina* on soybean, S145
for *Cercospora zeae-maydis* on corn, S202
for *Colletotrichum acutatum* on citrus, S118
for *Colletotrichum graminicola*, on maize, S19
for *Colletotrichum orbiculare* on cantaloupe, organically certifiable, S35
for control of tomato disease, Tom-Cast and, S147
on corn, at-tassel application of, S5
for crown rust on oats, yield response, S46
demethylation inhibitor, for *Sclerotinia homoeocarpa*, S197
for *Didymella bryoniae*, and resistance, S126
Difenoconazole, for *Colletotrichum coccodes* on potato, S93
effect of timing on yield and grain fill, aphid pressure and, S182
effect on hail-damaged corn, S34
for *Erysiphe necator*, resistance against, S9
for *Erysiphe necator* on grape, S136
Fludioxonil, for *Penicillium expansum* on apple, S93
for *Fusarium graminearum*, in Brazil, S121
for *Fusarium oxysporum* f. sp. *niveum* on watermelon, S32
Heritage 50 WDG for control of *Alternaria tagetica* on marigold, S46
iprovalicarb, for *Phytophthora capsici*, 1162, S74
IR-4 project and registration update, S126
kasugamycin, overview of, S166
Luna fungicides, S37
for managing downy mildew on cucurbits, quantitative review, 1066
metalaxyl, for *Pythium ultimum*, S102
model to predict selection for resistance, S51
modeling activity of on Septoria leaf blotch of wheat, S63
mutations in succinate-dehydrogenase inhibitor target protein and, resistance and, S37
novel timings for turfgrass diseases in upper Midwest, S64
Orvego, for *Peronospora* and *Pseudoperonospora* control in ornamentals, S60
oxidized silver as, S48
for *Penicillium expansum*, management of resistance, S163
against *Penicillium expansum*, reduced sensitivity to, S2
for *Penicillium expansum* on apple, S63
penthiopyrad, for *Ascochyta rabiei* on chickpea, S125
for *Peronospora belbahrii* on basil, S107
for *Peronospora* sp. on sweet basil, S175
for *Phakopsora pachyrhizi* on soybean, S203
for *Phoma terrestris* on onion, S113
for *Phytophthora capsici* on cucurbits, S195
for *Phytophthora erythroseptica* on potato, inheritance of resistance, S183
for *Phytophthora* spp., S90
for *Plasmodiophora brassicae* on canola, S99
for *Plasmopara viticola* on grape, S136
for *Podosphaera xanthii*, S16, S79
postharvest, resistance mechanisms in, S162
and postharvest decays of pome fruits, management of resistance, S163
and PROCULTURE model, for septoria wheat leaf blotch on winter wheat, S32
propiconazole
and *Ceratocystis fagacearum* on red oaks, 979
for *Sclerotinia homoeocarpa* on turfgrass, S102
for *Puccinia arachidis* on peanut in Nicaragua, S8
for *Puccinia graminis* f. sp. *tritici* on wheat, S44
for *Puccinia kuehnii* on sugarcane, S175
for *Pythium aphanidermatum* on bean, S48
QoI inhibitors
Alternaria solani on tomato, in North Carolina, S55
for *Venturia inaequalis*, S69
Regalia, for control of cucumber powdery mildew and lettuce downy mildew, synergistic effect with other fungicides, S123
Revus and Forum, for *Bremia lactucae* on lettuce, rainfastness of, S66
for *Rhizoctonia solani* on sugar beet in Nebraska, S48
for *Rhynchosporium secalis* on barley, resistance against, S49
for *Sclerotinia homoeocarpa*, early-season programs for, S137
for *Sclerotium rolfsii* on peanut, S40, S199
single-site and multi-site, mixtures of, S51
on soybean, effect on yield and yield components, S14, S50
succinate-dehydrogenase inhibiting, S9, S12
tebuconazole
adaptation of *Fusarium graminearum* to, 436
for *Cercospora arachidicola* on peanut, S105
triazole-based, *F. graminearum* on wheat, 160
for *Venturia inaequalis* on apple, S23, S100
for *Xanthomonas fragariae* on strawberry, S83
Zampro, S57, S131
Fungus gnats. *See Bradysia impatiens*
Funnell-Harris, D. L., S37, S185
Furcraea spp. (fique), *Olpidium virulentus* on, in Colombia, S42
Furman, B. J., S109
Fusaric acid, from *Fusarium proliferatum* on garlic, S95
Fusarium spp.
F. acuminatum, on bean, S185
F. aestuarinus, on smooth cordgrass, S195
F. asiaticum, population genetic analysis of in China, 328
F. avenaceum
on pea roots, S42
on peas in North Dakota, S25
on blueberry in Argentina, S21
Brassica spp. short-cycle cover crops for management of, S190
on corn, at-tassel fungicide application and, S49
crosses from highly aggressive parental isolates, variation and transgression of aggressiveness in, 904
on cucurbits, *Ascophyllum nodosum* extract and silicon for, S205
CYP51C gene from, for phylogenetic analysis, S35
F. graminearum
adaptation of *to* tebuconazole, 436
3ADON and 15ADON isolates from wheat in North Carolina, 1007, S4
on barley: deoxynivalenol and, chloroplast pigments in leaf tissues, 33, Cover photo January; evaluation of multiple management strategies for, S43; glyphosate effect on DON content and inoculum production, S193; modeling response to field temperature and wetness duration, S15
BDM1 and virulence of, S52
characterization of kinome of, S151
on corn, *Fusarium* toxins in, and ethanol production, S180
fungicide management programs for in Brazil, S121
lack of specialization of, 1057
on pea roots, gene expression patterns of, S42
pyraclostrobin resistance in, S147
on soybean, identifying resistant genotypes, S33
triazole-based fungicides for, 160
trichothecene mycotoxins associated with, 290
on wheat: aggressiveness of chemotypes with different levels of disease resistance, S189; collection of isolates 40-300 meters above ground, S208; correlation between disease severity and deoxynivalenol, S186; deoxynivalenol and nivalenol accumulation in, 763; epidemics in Nebraska, 2007 and 2008, S191; evaluation of cultivars for resistance, S50, S186; glyphosate effect on DON content and inoculum production, S193; grain yield, cultivar resistance and, S113; in Ohio, El Niño-Southern Oscillation and atmospheric teleconnection patterns, S66; single-kernel near-infrared technology to sort kernels based on scab and deoxynivalenol levels, S134; spatial heterogeneity in disease incidence, S65; validation and haplotyping of resistance genes in diverse germplasm, S104
F. lateritium, on Florida torreya, S174
F. mexicanum, and mango malformation disease, 1176, Cover photo November
F. moniliforme, on maize, S4
F. oxysporum
on banana, biological control of, S146
biological control of, synergistic effect between strains, S13
on carnation, soil biodisinfection for control of, S39
on chickpea, genetic diversity of, in Iran, S46
on cotton, S21, S200
on cucumber, in hydroponic systems, S95
on cucurbits, extracts from *Ascophyllum nodosum* for, S18
exploring lineage-specific chromosomes of, S75
on koa, in Hawaii, S118
on melon and hormone disruption, 682
on *Physalis peruviana*, S129
race 3, on tomato in Iran, S101
on strawberry, in Western Australia, S35
on tomato: detection of in Mexico using soil phytopathometry, S29; effect of fumigation, mustard meal amendments, and grafting on, S73; grafting as disease management tool for, S135; silicon for control of, S52
on watermelon: management with fungicides, S32; resistance of triploid cultivars, S99; *Streptomyces lydicus* and cover crop for management of, S51; *Vicia villosa* cover crop for suppression of, S207
population genetic framework for understanding aggressiveness of, S157
F. proliferatum, on garlic, fusaric acid production and, S95

F. pseudograminearum, lack of specialization of, 1057
F. redolens, on bean, S185
relationship between yearly fluctuations in intensity and environmental variables, 784
in small grain, integrated management strategies for, S137
F. solani
Bacillus subtilis M36 for control of, S84
on cucurbits, S18
non-host resistance response at nucleosome level, S45
on sorghum, lignin biosynthesis and, 671, S37
on soybean
characterization of on scale of individual seeds/roots, S111
lignin levels and, 671, S37, S185
multilocus genotyping for species diversity, 58
soybean cyst nematode infestation and resistance, S29
on sugarbeet in Iran, PCR-RFLP analysis on, S13
F. thapsinum, on sorghum, S90
on tomato, effect of fumigation, mustard meal amendments, and grafting on, S73
F. tricinctum, on soybean, S188
F. verticillioides
antagonistic response to, S10
CBF transcription factor family in, S109
conidiation of, genes differentially expressed during, S18
on corn: characterization of genes regulating colonization, S148; FB1 translocation in seedlings infected with, S147; *FvNoxR* gene of, S44; in Nigeria, S117; nitric oxide detoxifying flavhemoglobin and, S10
Fst1-interacting proteins and virulence, S62
FST1 gene of, functional characterization, S62
MADS-box family of transcription factors in, S94
metabolic fingerprinting technique for functional genomics in, S120
polyketide biosynthetic gene clusters in, S18
F. virguliforme
in soil, quantification of using SYBR green and Taqman assays, S80
on soybean: extraction from crop residue and conidia, S187; field and greenhouse evaluation of fungicide seed treatment for control of, S191; foliar symptoms and early infection of, S144; *Phialophora gregata* and, S79; and *Phialophora gregata* co-inoculation, S188; plant ant-FvTox1 antibodies against, S183
for virus-induced gene silencing studies, S187
on wheat
integrated management of, S87
monitoring using quantitative real-time PCR, 49
plant height and severity of crown rot, 1276
resistance against, cytochrome p450 gene and, 183, Cover photo February
Futai, K., 1289
FvTox1 antibodies, and *Fusarium virguliforme* on soybean, S183

Gabriel, D., S108, S111
Gadoury, D. M., 246, 1240, S8, S38, S88
Gaeumannomyces graminis var. *tritici*
periodicity in host availability and evolutionary branching, 1169
and take-all disease, *Phialophora* spp. and, 404
on wheat, *Pseudomonas* spp. for biological control of, S141
Galagan, J., S64, S75
Galbraith, D. W., S154
Gale, L. R., S75
Gallegly, M., S207
Gal-On, A., 225, 798
Galvez, L. C., S38
Gamalero, E., 805
Gamba, F., S118
Gambhir, A., S185
Gamliel, A., 367
Ganiger, M. C., S96
Gao, B., S38
Gao, F., S38
Gao, Q., S38, S139
Garavito, M. F., S39
Garbelotto, M., S115, S167
Garber, N., S39
Garber, R. H., S153
Garces, F., S39
Garcia, A., S107
García, A., S39
Garcia, L., S39
García, M., S95
García-Cano, E., 582
Garcia-Pedrajas, M. D., 1364, S64, S98
Garczynski, S. F., S88
Gardiner, D., S75
Garg, A., S11
Garlic. *See Allium sativum*
Garneni, S., S133
Garner, J., S16
Garrett, K., S121
Garrett, K. A., S41, S120
Garrett, W. M., 42
Garrido, P., S30
Gartemann, K., S22
Gartemann, K.-H., 252
Garzon, C., S7, S30
Garzon, C. D., S7, S154
Gaska, J., S67
Gaskins, V., S58
Gaskins, V. L., 42
Gasparoto, M., S11
Gassmann, W., S38
Gavin, J. C., S135
Gay, A. P., 21
Gazaway, W. S., S153
Gbur, E. E., S153
Ge, X., S39
Gearhart, K., S39
Gebhart, G. D., S190
Geiser, D. M., 732
Gelbart, D. Guenoune-, 798
Geminiviruses, evolution of, S149
Geneva City School District, New York State Agricultural Experiment Station partnership and, S20
Genomics of plant-associated microbes, overview of, S167
Gent, D. H., S40, S84, S138
George, S., S122
Geosmithia morbida, on walnut, status in California, S48
Geotrichum candidum
on peaches and nectarines, S141
on tomato, S33
Geranium, *Puccinia pelargonii-zonalis* on, S31, S116
Gergerich, R., S67
Gergerich, R. C., S201
Gerik, J. S., S135
Germán, S. E., 376
Gevens, A. J., 941, S40, S174
GFLV. *See Grapevine fanleaf virus G*
GFP (green fluorescent protein)
Dickeya sp. tagged with, 134, 1128
in *Ophiosphaerella herpotricha* on bermudagrass, 415
Ghabrial, S., S60, S119
Ghabrial, S. A., 880, 890, S107
Ghadamyari, S., S87
Ghimire, S., S40, S51
Giampan, J. S., S87
Gibberella zeae
crosses from highly aggressive parental isolates, 904
and deoxynivalenol in kernels, 719
influence of mating pheromones and affinity-selected peptides on, S43
Gibberellic acid, for management of *Botrytis cinerea* on grape, S49
Giesler, L. J., S185
Gilbertson, R. L., S12, S138
Gilchrist, E., S40
Gildow, F., S100
Gildow, F. E., S126
Giles, C. G., S203
Gill, J. J., S31
Gillespie, J., 290
Gilligan, C. A., 638, 1169
Ginger, *Ralstonia solanacearum* on, S141
Giraud, F., S32, S76
GIS and GPS, for spatial and temporal analysis for epicenters of soybean rust disease foci, S186
Gisi, U., S162
Gitaitis, R. D., S9, S122
Gladiolus spp.
Cucumber mosaic virus in, S59
F. oxysporum f. sp. *gladioli* on, S67
Glaettli, A., S37
Glandorf, D. C. M., 404
Glass, K. M., S21
Glassy-winged sharpshooters, saliva of, as vector for *Xylella fastidiosa* inoculation, S9
Gleason, M. L., 345, S15, S26, S54, S112, S189
Glenn, A. E., S10, S18, S147
Gliocladium catenulatum, for *Plasmodiophora brassicae* on canola, S99
Gliocladium virens. *See also Trichoderma virens*, for *Sclerotinia* spp. on lettuce, S91
Gloeocercospora sorghi, on sorghum grown for bioenergy in Alabama, S16
Glomus intraradices, and hormone production caused by *Fusarium oxysporum* on melon plants, 682
Glover, K. D., S59
Glover, R., S154
GLRaV-2. *See Grapevine leafroll-associated virus 2*
GLS. *See* Gray leaf spot
Glucksman, S., S40
Glyceollin, response of soybean pathogens to, 897
Glycine max (soybean)
Bean pod mottle virus in, S123, S183
Cercospora spp. on
C. kikuchii, S22, S26
C. sojina, S28, S145, S182
characterization of fungal communities associated with roots, S14
disease survey of commercial fields in Alabama 2009, S118
effect of seed treatment on root diseases and yields of, S89
effect of timing of fungicide application on yield and grain fill, aphid pressure and, S182
FAD3 in, and defense-related physiology, S119
fungicides on, effect of on yield in 2008, 2009, S14
Fusarium spp. on
characterization of on scale of individual seeds/roots, S111
F. graminearum, identifying resistant genotypes, S33
lignin levels and, 671, S37, S185
soybean cyst nematode infestation and

resistance, S29
F. tricinctum, in Minnesota, S188
F. virguliforme: co-inoculation with *Phialophora gregata* and, S79, S188; extraction from crop residue and conidia, S187; field and greenhouse evaluation of fungicide seed treatment for control of, S191; foliar symptoms and early infection of, S144; plant ant-FvTox1 antibodies against, S183
glyceollin and, response of pathogens of to, 897
green stem malady in, S115
Heterodera glycines on, *Rhg* genes for resistance against, S26, S58
identification of seedling pathogens from fields planted at three different temperatures, S129
Macrophomina phaseolina on, effect of environment and cultivar on, S31
Phakopsora pachyrhizi on
combinatorially selected peptides for protection against, 1111
effect of solar radiation on disease severity, S143
gene expression during appressorium formation by, S37
influence of environmental conditions on epidemic development, in Nigeria, S128
in Minnesota, five years of monitoring, S66
in Nigeria, virulence and genetic diversity, S190
protein profile differences between resistant and susceptible strains, S96
proteomics for identification of markers for resistance, S164
Rpp2 locus and resistance, S96
screening for resistant lines, S61
screening protocol for assessing baseline sensitivity to fungicides, S203
sentinel plots in Florida, S178, S204
transcriptome analysis of interactions, S127
Phialophora gregata on, S79, S186, S188
Phomopsis longicolla on, S26, S70, S148
Phytophthora sojae on
calmodulin gene and resistance, S107
genes conferring partial resistance, S190
genetic variation in populations from Ohio and South Dakota, S191
mapping multiple novel resistance genes against, S192
modified method to screen for partial resistance, S123
multiplexed, probe-based quantitative PCR assay for, S48
*Rps*8 gene and resistance, S189
Pythium spp. on, S33, S111, S184
saccharine and induction of systemic acquired resistance in, S122
seed treatments for control of seedling diseases, S203
soybean cyst nematodes on, S187, S188, S190
Soybean mosaic virus in, 931
spatial and temporal analysis for epicenters of disease foci, S186
strobilurin fungicides and other pesticides, S50
sudden death syndrome of, 58
survey of diseases of in Ohio River Valley region in 2009, S39
viruses infecting, in Nigeria, S126
Xanthomonas axonopodis pv. *glycines* on, S8, S103
Glynn, E., S17
Glynn, J. M., S41
Glynn, N., S106
Glynn, N. C., S173, S175
Glyphosate, DON content and *Fusarium graminearum* inoculum production in wheat and barley, S193
Gmitter, F. G., S61
Gnats, fungus. *See Bradysia impatiens*
Goates, B. J., 655, S41
Gobena, D. J., S41
Goenaga, R. J., S176
Goes, da Silva, F., 1089
Goesmann, A., S120
Goh, J., S41
Goheen, D. J., S167
Goheen, E. M., S166
Gold, S. E., 1364, S64, S98
Golino, D., S3
Golino, D. A., 830
Golovinomyces cichoracearum, on sunn hemp, S174
Gomez, A., S75
Gomez, L., S41
Gomi, K., 85, 120
Gonçalves, F. P., S41
Gongora, C., S188
Gonzáles, E. R., S35
Gonzales, M. A., S41
Gonzalez, A. D., S4
Gonzalez, C., S42
Gonzalez, C. F., S31
González, N., 1340
González, V., 58
González-Vera, A. D., 172
Goodin, M., S11
Goodwin, S. B., S25, S45
Goss, E. M., S42, S157
Gossen, B. D., S59, S99, S117, S125
Gossypium spp. (cotton)
Fusarium oxysporum on, S21, S200
impact of cropping sequence on, peanut, corn and, S20
Meloidogyne incognita on, S75, S202
Phymatotrichopsis omnivora on, S54
Pythium spp. on, S153
Rotylenchulus reniformis on, S86
Thielaviopsis basicola on, S75
Verticillium dahliae on, S75, S140
Goswami, R. S., S25, S42, S185
Gottwald, T., S172, S200
Gottwald, T. R., 638, 1030, S15
Gougherty, A., S42
Gourley, J., S70
Govindarajulu, A., S42
Gowda, S., S56
Graber, E. R., 913
Grafting, tomato and
Clavibacter michiganensis transmission during, S13
effects of on plants and associated microbial communities, S20
as management tool
for *Fusarium* spp., S73, S135
for *Pythium* spp., S73
for *Ralstonia solanacearum*, S109
Graham, J. H., S13, S15, S37, S42, S57, S172, S173
Graham, M., S96
Graham, T. L., S20
Gramacho, K. P., S42
Graminella nigrifrons (black-faced leafhopper), transmission of *Maize fine streak virus* by, 1138
Granke, L., S43
Granke, L. L., S43
Grape. *See Vitis vinifera*
Grapefruit. *See Citrus paradisi*
Grapevine fanleaf virus (GFLV)
high-throughput testing of transgenic resistance constructs from, S93
in *Xiphinema index*, transmission competency of single lines, 384
Grapevine leafroll viruses
Grapevine leafroll-associated virus 2, 698, Cover photo July
Grapevine leafroll-associated virus 3, S3, S45, S56
mealybug transmission of, 830
in Virginia vineyards, S90
Grapevine necrotic union (GNU), as new disease in California, S3
Grapevine rupestris stem pitting-associated virus (GRSPaV), subcellular location of replicase proteins of, S104
Grapevine virus A, on grapevine in Washington, genetically diverse isolates, S81
Grau, C. R., S186
Grava, A., 97
Gray, M. E., S3, S74
Gray, S., S61, S100
Gray leaf spot (GLS), in maize, mapping quantitative trait loci for, 72
Graybosch, R. A., 230
Green, J., S11
Green, J. F., 493
Green stem malady, in soybean, S115
Greenberg, J. T., S160
Greene, S. E., 493
Greer, C. A., 502
Grégoire, C., S196
Gremmeniella abietina, nomenclature of, S194
Greve, C., S9
Grimes, J., S39
Grisham, M. P., S43
Groom, J., S60
Gross, D., S76
Gross, D. C., S136
Gross, J., S54
Gross, N. W., S43
Gross, P. L., S43
Grosser, J. W., S37, S86
Groth, D., S65
Groth, D. E., S201
Groundnut ringspot virus (GRSV), on tomato, in Florida, S134
Grove, G. G., S40, S73, S138
Groves, R., S19, S119
Grubisha, L. C., S39, S43
Grunwald, N. J., S42, S150, S156
Grünwald, N. J., 732
Grybauskas, A., S137
Gu, B., S158
Gu, G., S44
Gualandi, R. J., S2, S44
Guaragna, M., S59
Guardado, A., S86
Gubler, W. D., 1048, S17, S124, S129
Gubler-Thomas grape powdery mildew risk index, revising high temperature threshold for, S17
Gudmestad, N., S182, S203
Gudmestad, N. C., S135, S183
Guerra, D. S., S121
Gugino, B., S77
Gugino, B. K., S195
Gulati-Sakhuja, A., S44
Guo, A., 573
Guo, B., S37, S57
Guo, J., S140, S141, S146
Guo, L., 997, S44
Guo, Q., S70, S75
Guo, Y., S3, S44, S105
Gupta, V., S44
Gurung, S., S3, S45, S76
Gustus, C., 80
Gutha, L. R., S45
Gutierrez-Aguirre, I., S81
Guttman, D. S., 208
Guzman-Barney, M., S176
Gwinn, K. D., 493, S2, S44, S131
Gymnoascus reessii, against root-knot nematode, S105
GyrB gene, *Xylella fastidiosa* and, S115, S116

H gene, and resistance to Hessian fly, 279
Ha, B., S61
Ha, Y., S45
Hadwiger, L., S45
Hadziabdic, D., S45
Hagan, A. K., S16, S20, S46
Haghighi, S., S46
Hajimorad, M. R., S135
Hajmansoor, S., S6, S32, S62
Halbert, S. E., S46, S77, S107
Halbrendt, N. O., 539, S46
Halkett, F., 1262
Hall, D. G., S6
Halterman, D., S19, S23, S46
Halterman, D. A., 454
Ham, J., S47
Hamilton, J., S153
Hamilton, J. P., S127
Hamilton, S. L., 493
Hammerschmidt, R., S181
Hammond, J., S10, S71, S154
Hammond, R. W., S149, S207
Han, A., S76
Han, P., S47
Han, S., S96, S158
Hancock, J. F., S83
Hand, E. K., S17
Hanke, D. E., S70
Hanna, L., S111
Hansen, J., S3
Hansen, M., S135
Hanson, L. E., S47
Hanson, S., S47, S62, S68, S107
Hao, J., S60, S72, S74, S82
Hao, J. J., 1162
Hao, L., S47
Hao, W., S47, S51
Harbertson, J. F., S45
Harding, M. W., S48
Harding, R., 271
Harel, Y. M., 913
Hari, K., S59
Harman, G., S165
Harman, G. E., 1213
Harmon, C. L., 941, S177
Harmon, P. F., 941, S36, S130, S138, S152, S175, S201
Harnsomburana, J., S11
Harper, S. J., 1282
Harrington, T. C., 345, 1118
Harris, D. K., S61
Harris, M. O., 279
Harrison, L., S48, S207
Harrison, N. A., S69, S175
Harrison, S., 511
Harrison, S. A., 484
Hartman, G., S190
Hartman, G. L., 897, S48, S107, S128, S131, S185
Hartman, J. R., 345, S6
Hartung, J., S143
Hartung, J. S., 756, 1077, S42, S111, S143
Harveson, R. M., S48
Hasey, J. K., S48
Hatfield, J. L., S179
Hau, B., S82
Haudenshield, J., S190
Haudenshield, J. S., S48, S107, S131, S185
Hauff, R., S128
Hausbeck, M., S43, S133, S176
Hausbeck, M. K., 619, S34, S43, S201
Havens, W. M., 880, 890
Hawkins, N., S49
Hayes, R. J., 1222, S107
Hazanovsky, M., 271
He, B., S135
He, G., S105
He, M., 593
He, Y., S185
He, Z., S49, S92
He, Z. H., 313
Hearne, S., S113
Heaton, E., S180
Hed, B., S49
Hedley, P. E., S80
Heidenreich, M. C., 246
Heiman, D., S64
Hein, G. L., 230
Helianthus spp. (sunflower)
  Macrophomina phaseolina on, S128
  in Nebraska, survey for predominant diseases of, S48
Helicobasidium sp., on cranberry, and fairy ring, S94
Helix aspersa (brown garden snail)
  attraction of *Caenorhabditis elegans* to, S27
  nematode and bacterial associates of, S113
Helliwell, E. E., S49
Helminthosporium victoriae, broad-spectrum antifungal protein from, 880, 890
Henderson, D. C., S10, S154
Henn, A., S5, S49
Henne, D. C., S50, S138, S203
Henrissat, B., S64
Henry, G., S158
Henry, R., S50
Herbaspirillumn seropedicae, for control of *Ustilago scitaminea*, S111
Herbicolins. *See also* Pantocin A, of *Pantoea vagans* C9-1, S59
Herman, M., S41
Hernandez, F. R., S4
Hernandez, M. G., S89
Hernandez Nopsa, J., S50, S147, S186, S191
Hernandez-Martinez, R., S87, S101
Hernandez-Zepeda, C., S50
Herrero, M. L., 246
Herrero, S., S121
Hershman, D., S137
Hershman, D. E., 160
Hert, A., S66
Heterodera spp. (cyst nematodes)
  H. avenae and *H. filipjevi*, PCR for distinguishing, 216
  CLE perception in *Arabidopsis* roots, S108
  effector proteins of, modulation of plant molecular processes, S186
  H. glycines (soybean cyst nematode)
    on *Arabidopsis thaliana*, characterization of bHLH transcription factors induced in, S187
    on bean, S102
    effect of poultry litter on reproduction of, S29
    extension demonstration and outreach for management of, S185
    secreted CLE proteins of in plant cells, S132
    on soybean: BPMV and SMV vector systems to explore interactions, S187; effect of planting density, population size, and soil pH on, S188; *Fusarium* spp. and, S29; resistance of varieties in fields infested with different HG types, S190; *Rhg* genes for resistance against, S26, S58
    on sugar beet root, S111
    uptake and exclusion of proteins by, S38
  H. schachtii
    Dactylella oviparasitica from soils suppressing growth of, S141
    on sugar beet, S108, S136
Heterokaryon incompatibility, in *Aspergillus flavus* and *Aspergillus parasiticus*, S85
Hettwer, U., 444
Heungens, K., S42
Hewezi, T., S132, S179, S186, S187
HG test, for soybean cyst nematode resistance, S190
Hickman, L. L., S28
Higbee, B., S119
Higgins, B., S122
High Altitude Balloon Experiments in Technology (HABET) program, overview of, S188
Highland, H., S50
Highland, H. B., S200
High-throughput sequencing, viruses and, S154
Higuchi, K., S143
Hijmans, R., S121, S156
Hilf, M. E., S70
Hill, C. B., 897
Hill, J., S120, S187
Hill, J. H., S96
Hillman, B., S98
Hily, J., S50
Himmelstein, J., S51, S207
Hingston, L. H., 460
Hinton, D. M., S10
Hirayae, K., 612
Hirsch, R. L., S148
Hladky, L., S128
Hobbelen, P. H., S51
Hodges, T., S154
Hoeschele, I., S190
Hoffmann, L., S32, S76
Hogenhout, S. A., 1138, S27, S184
Hogetsu, T., 747
Hogg, A. C., 97
Hoitink, H., S124
Hoke, S., S32
Holah, N., S181
Holah, N. S., S186
Holb, I. J., S51
Holbrook, C. C., S105
Holdengreber, V., 798
Holland, J. B., 72
Holland, R., S26, S31
Hollier, C. A., S201
Holmes, G. J., 1066
Honeybee, proboscis extension reflex as biological sensor for *Erysiphe necator*, S124
Honeycutt, C., S92
Honeycutt, W., S67
Hong, C., 632, S47, S51, S97, S207
Hooftman, R., S81
Hoogenboom, G., S92
Hooks, C. R., S133
Hop, *Podosphaera macularis* on, S40, S138
Hopkins, D., S52, S201
Hordeum vulgare (barley)
  Blumeria graminis on, 21, S158
  Cochliobolus sativus on, S110, S118
  deoxynivalenol and, 33, Cover photo January
  Fusarium asiaticum on, 328
  Fusarium graminearum on, S15, S43, S193
  Puccinia graminis on, S157
  Puccinia hordei on, S4
  and *PWT1* avirulence allele of *Magnaporthe oryzae*, 436
  Pyrenophora teres on, S68
  septoria speckled leaf blotch and net form net blotch of, 80
Horevaj, P., S52
Hormesis, cyazofamid, *Pythium aphanidermatum* and, S36
Horn, B. W., S85, S92, S157
Horseradish, bacterial species associated with internally-discolored roots, S191
Horsfall-Barratt scale, for hypothesis testing, consequences of use of, 1030
Horsman, L., S134
Horton, T. R., S29
Horvath, B., S6, S205
Horvath, B. J., S28, S80, S152
Hoshi, A., S52
Hosogi, N., 840
Hosseini, P., S127

Host availability. *See* Periodicity in host availability
Host-selective toxins, *Pyrenophora tritici-repentis* on wheat and, 474, S160
Houchins, D., S108
Howard, R. J., S48
Howard, S., S38
Howe, P. J., S186
Hoy, C., 1138
Hoy, J. W., S39
Hoy, M. A., S22
Hresko, M., S38
HrpG and HrpX regulons, of *Xanthomonas axonopodis* pv. *citri*, S44
HrpL regulon, of *Erwinia amylovora*, S80
HRT protein, resistance to *Turnip crinkle virus*, and photoreceptors, S56
Hsu, H., S59
Hsu, S., S71
Hu, C., S52, S68
Hu, C.-H., 997
Hu, J. S., S82
Hu, X., S61, S133
Huang, C., S52, S53
Huang, G., S116, S141
Huang, J., 822
Huang, X., S53, S74
Huanglongbing. *See also Candidatus* Liberibacter
  colonization of *Cuscuta indecora* and, 756, Cover photo August
  current status and future of, S200
  early events of at ultrastructural level, 949, Cover photo September
Huber, D. P., S132
Huber, L., S76
Hudson, M., S106
Hudson, W., S78
Hughes, M. A., S177
Hughes, T., S26
Hughes, T. J., S186
Hulbert, S. H., S142, S167
Hulvey, J., S41
Human pathogens, on plants, S168, S177
Humann, J. L., S53
Humphry, M., S158
Hurburgh, C. R., S109
Hussey, R., S141
Hussey, R. S., S116, S186
Husson, C., 1262
Hutmacher, R. B., S153
Hutton, D., S75
Hwang, J., S150
Hwang, S., S99
Hydrangea spp.
  Corynespora cassiicola and *Cercospora hydrangeae* on, S84
  Pucciniastrum hydrangeae on, evaluation of resistance against, S71
Hydrogen peroxide
  Alternaria alternata in Japanese pear, 840
  in barley with *Cochliobolus sativus*, S118
Hynes, R. H., S99
Hyon, G.-S., 840
Hypersensitive response (HR)
  Blumeria graminis interactions with barley, 21 of maize, lesioned mutants for characterization of, S11
Hyperspectral remote sensing, for *Sugarcane yellow leaf virus* in sugarcane, S43
Hyten, D., S189
Hyten, D. L., S61

Iandolino, A., 1089
Ibaragi, K., 436
Ibekwe, A., S144
Ibrahim, D., S84
Idris, A. M., S50, S53, S172
Iglesia-Garcia, A., S142
Iglesias, C., S95
Iglesias-Garcia, A., S53
Ignatov, A., S207
Ikeda, K., 840
Ilarvirus sp., in ligustrum, S112
Ilori, C. O., S92
Imidacloprid, for *Xanthomonas citri* subsp. *citri*, S42
Immunocapture RT-PCR technology, virus detection using, S139
Impatiens necrotic spot virus, NSm proteins of, S70
ImpmIPE, food security and, S181
Inderbitzen, P., S64
Inderbitzin, P., S53
Indole-3-acetic acid, in potato purple top phytoplasma-infected tomato plants, S206
Induced systemic response (ISR)
  compost water extracts for control of *Phytophthora capsici* on pepper and, 774
  integrated pest management and, S165
  Pseudomonas chlororaphis O6 for biological control and, S158
Ingram, D. M., S5, S49
Innate immunity, pattern recognition receptors in, S157
Integrated pest management, induced resistance and, S165
Intergenic spacer region, of *Verticillium dahliae*, S79
Iodomethane, for *Meloidogyne javanica* on carrot, S135
Ioos, R., 105
IPI-O, and broad-spectrum resistance against *Phytophthora infestans* in potato, S46
Ipomoea batatas (sweet potato), S95
Iprodione
  for *Botrytis cinerea* on strawberry, S6
  ELISA kits for analysis of residues on creeping bentgrass, S64
Iprovalicarb, for *Phytophthora capsici*, 1162, S74
IR-4 Project
  challenges and successes of registration process, S162
  fungicide registration update, S126
Irey, M., 567, S24, S200
Iris yellow spot virus (IYSV)
  complementation between viruses in datura, and movement of gene silencing suppressor, S10
  Thrips tabaci and *Frankliniella fusca* as vectors for, S122
Irish-Brown, A., S69
Iron sulphur gene (*DbSDHB*), and fungicide resistance in *Didymella bryoniae*, S9
Ironwood tree. *See Casuarina equisetifolia*
Irrigation water
  Phytophthora spp. in, S47, S51
  Pseudomonas cannabina pv. *alisalensis* in, S79
Isakeit, T., S54, S106
Isakeit, T. S., S153
Ishida, Y., 85
Ishiga, T., S54, S160
Ishiga, Y., S54, S129, S160
Ishii, Y., S52
Ishikawa, K., 612
Ishimaru, C., S59
Ishimaru, C. A., S54, S120, S124
Islam, M. A., 356
Ismail, S., S54
Isoparaffin-based oil, for controlling dollar spot and gray leaf spot in turfgrass, S208
Ithal, N., S58
Ito, T., 922
Ivey, M., S124
Ivey, M. L., S33
Ivors, K., S55
Ivors, K. L., 732, S52
IVR (inhibitor-of-virus-replication) gene, and resistance to *Botrytis cinerea*, 225, *400*
Izumi, Y., 120
Izumori, K., 85
Izzo, A., S134

Jackson, A., S202
Jackson, E. W., 484, 511
Jackson, K., S55
Jackson, K. L., S142
Jackson, T., S182, S183
Jackson, T. A., S180, S187
Jacobs, J. M., S55
Jacobsen, B. J., S87, S165, S168
Jacon, G., S27
Jagadeeswaran, G., S3
Jaime-Garcia, R., S55
Jain, R., S59
Jalan, N., S55
Jan, F., S53, S146
Jang, S., S97
Janisiewicz, W. J., 42, S56, S58
Janousek, C. N., S17
Jansky, S., S19
Japanese oak wilt, *Raffaelea quercivora* and, spatial distribution in xylem, 747
Japanese pear. *See Pyrus pyrifolia*
Japonica rice landraces, QTL in for broad-spectrum resistance to, 822
Jaraba-Navas, J., S75
Jardine, D., S185
Jarugula, S., 698, S56
Jasmonic acid
  Cucumber mosaic virus 2b RNA silencing suppressor and, S70
  Fusarium oxysporum on melon and production of, modification by *Trichoderma harzianum* and *Glomus intraradices*, 682
  plant immunity and, S160
Jayaraj, J., S18, S205
Jayasena, A. S., S56
Jeffers, S. N., S150
Jeffries, P., 814
Jeger, M. J., 814
Jellison, J., S21
Jenkins, D. M., S66
Jeon, A., S56
Jeon, J., S97
Jeong, M., S25
Jeong, R., S56
Jeyaraman, R., S56
Ji, C.-Y., S96
Ji, P., S55 S57, S142
Jia, M., S202
Jia, Y., S202, S204
Jiang, T., S57
Jiang, Y., S206, S207
Jicama, *Phakopsora pachyrhizi* on, in U.S., S29
Jimenez, P., S13, S19, S129
Jin, J., S187
Jin, X., S57
Jin, Y., 432, S93
Jo, Y., S57
Joannon, B., 1373
Johal, G., S11
Johnson, B. J., 532, S1
Johnson, C., S97
Johnson, D., 271
Johnson, D. A., S31
Johnson, E. G., S57, S173
Johnson, K., S148
Johnson, K. B., 1330, S166
Johnson, R. M., S43
Johnson, S. B., S194
Johnston, J. A., 97
Johnston, R. H., 97
Jomantiene, R., S29, S206
Jones, D., 567, S24
Jones, J., S36
Jones, J. B., 208, S13, S22, S103, S172, S173

Jones, S., S147
Jonkers, W., S75
Jordan, R., S59, S143
Jordan, R. L., S10, S154
Jordan, S. A., 941, S174, S175
Joseph, L., S26
Joshua, J., S84
Jossey, S., S57
Judelson, H., S140
Judge, C. A., S102
Juglans spp. (walnut)
Agrobacterium tumefaciens on seeds used for rootstock production, S141
Brenneria rubrifaciens on, *rpo*N and, S80
Geosmithia morbida on, status in California, S48
Jumpponen, A., S41
Jung, G., S92, S102, S197
Jung, H., S160
Jung, K., S25, S65
Juniperus occidentalis (juniper), phytoplasma on, S206
Jurick, II, W. M., S56
Jurick, W., S58
Jurick II, W. M., 42
Juvale, P. S., S187
Juzwik, J., 979

K. O'Donnell, 1176
Kabbage, M., S45, S58, S160
Kabeil, S. S., S1
Kablan, L., S58
Kachroo, A., S38, S56, S58, S117, S119, S139
Kachroo, P., S56, S58, S139
Kadooka, C. Y., S128
Kaitheri Kandoth, P., S58
Kakizawa, S., S52
Kakvan, N., S6
Kale, S. D., S158
Kalifa, H. B., 913
Kalmowitz, K. E., S60
Kalpana, K., S59
Kamber, T., S59, S120
Kamenidou, S., S59
Kammerer, S., S152
Kamo, K., S59
Kamo, K. K., S67
Kandel, Y. R., S59
Kanematsu, S., 922
Kaneshiro Sueno, W., S78
Kanetis, L., 738
Kang, S., 732, S25, S64, S79, S97, S150
Kang, Z., S53, S133
Kano, A., 85
Kantartzi, S. K., S28
Karakaya, A., S15
Karakkat, B., S59
Karasev, A., S61
Kariuki, G. M., S60
Karki, H., S47
Karlovsky, P., 444
Karthikeyan, G., S101
Kasugamycin, overview of, S166
Katan, J., 367
Kattan, A., 532
Kaufman, H. W., S153
Kaur, P., S60
Kav, N. N., S130
Kazan, K., S75
Kearney, S., S17
Keese, R. J., S60
Kegley, A. J., S120
Keinath, A. P., S60, S201
Keller, K., S67
Keller, M., S40
Kelley, E., S60
Kemerait, R., S57
Kemerait, R. C., S37, S92, S200, S202
Kendall, A., S60
Kendrick, M. D., S61
Kenerley, C. M., S27
Kennelly, M., S91
Kenney, M. J., S61
Kentucky bluegrass. *See Poa pratensis*
Kephart, K. D., 97
Kerlan, C., S61
Kerns, J., S64, S137
Kerns, J. P., S120
Kerrigan, J. L., S204
Kersbergen, R., S194
Kersey, C., S61
Kessel, G. J. T., 1146
Khalaf, A. A., S61
Khan, M., S25
Khan, M. F., S102
Khan, M. F. R., 689
Khan, N. I., S61
Khattab, A., S4
Khazaeli, P., S62
Khodzaeva, A., 593
Khozeini, F., S83, S124
Khudokormova, Z. N., S65
Kidney bean, soybean cyst nematode on, S102
Kilcrease, J., S62
Killiny, N., S62
Kim, D., S25, S97
Kim, H., S58, S62, S97, S160
Kim, J., S62
Kim, J.-G., 774
Kim, K., S41, S62
Kim, K. D., 774
Kim, R., S116
Kim, S., S97, S161
Kim, W., S25
Kim, Y., S63, S96, S143, S158, S163
Kinard, G., S71, S72, S101
Kinases, of *Fusarium graminearum*, S151
Kinyua, Z. M., S60
Kirk, W. W., S9
Kirkpatrick, T., S75
Kirkpatrick, T. L., S114, S153
Kiseleva, M. I., S65
Kiss, E., 863
Kiss, L., S19
Kistler, C., S75
Kito, H., S63
Klappach, K., S63
Klassen, W., S176, S178
Kleinhenz, M. D., S20
Klessig, D., S77
Kliebenstein, D. J., S165
Kliejunas, J. T., S94
Klieman-Shoval, S., 798
Klindworth, D., S93
Kline, T., S160
Klittich, C. J., S63
Kloepper, J., S18, S146
Kloepper, J. W., S63, S65, S165, S170
Klosterman, S. J., 1222, S64, S79, S98, S107
Klouser, L., 97
Kluepfel, D. A., S141
Knapp, S. J., S105
Knauf-Beiter, G., S66
Koa. *See Acacia koa*
Kobayashi, D., S98
Koch, P., S64, S137
Koebnik, R., S8
Koehrsen, M., S64, S75
Koike, S. T., S14, S107, S140, S155
Kojima, N., S52
Kolander, T. M., S187
Kolmer, J. A., 376
Kolomiets, M., S96
Kolomiets, T. M., S64, S65
Komar, V., 384
Koné, D., S142
Kong, M., S64
Kong, P., 632, S51, S207
Kong, S., S65, S97
Koornneef, A., S160
Kopperud, K., S11
Korban, S. S., 192, S107
Korus, K. A., S187
Kouassi, N., S65
Kousik, C., S134, S201
Kousik, C. S., 1194, S65
Koval, N. C., S34
Kovalenko, E. D., S65
Krakowsky, M., S114
Krakowsky, M. D., 72
Kramberger, P., S81
Krampis, K., S190
Kreiser, B., S83, S134
Krishna Kumar, V., S65
Krishnam Raju, S., S65, S170
Kriss, A. B., 784, S65, S66
Kroll, J., S9
Kubota, R., S66
Kudzu. *See Pueraria* spp.
Kuhar, T. P., S205
Kuhn, P., S66
Kuldau, G. A., S44
Kumar, K., S146
Kumquat. *See Fortunella* spp.
Kunjeti, S. G., S66, S207
Kunkel, D., S162
Kunta, M., S66
Kuo, K., S71
Kurle, J. E., S66, S187, S188
Kurowski, C. J., 972
Kwak, Y.-S., 404

Labavitch, J. M., S9
Labbé, C., S198
Labyrinthula terrestris, on turfgrass, S204
Lacey, L., S55
Lackermann, K., S67
Lacy, G. H., 208
Laflamme, G., S194
Lagenaria siceraria (bottle gourd), *Phytophthora capsici* on, S65
Lahaye, T., S36, S159
Lahlali, R., S99
LaHue, S. S., S28
Laird, E., S94
Lak, M., S84
Lakatos, P., S51
Lakshman, D. K., S6, S67
Lalancette, N., S195
Lambert, D. H., S194
Laminated root rot (LRR), Douglas fir seedlings infected with *Phellinus sulphurascens*, 356
Lamondia, J. A., S195
Lamour, K., S41
LAMP (loop-mediated isothermal amplification) for *Ralstonia solanacearum* race 3 biovar 2, S66
for rapid detection of *Phytophthora* spp., 143
for *Xylella fastidiosa*, 1282
Lamppa, R. S., S185
Lan, C. X., 313
Land Grant University, S168
Laney, A. G., S67, S201
Lange, H. W., S20
Langston, D. B., S9, S126
Lansdell, T., S54, S59
Lapidot, M., 798
Lapochkina, I. F., S65
Larkin, R. P., S67, S92
Larsen, H., S101
Larsen, M., S42
Larsen, R., S68, S128
Larsen, R. C., 972
Lartey, R. T., S68
Lasiodiplodia theobromae, on rambutan, in Mexico, S89
Lassiter, E. S., S68

Laurel wilt, *Raffaelea lauricola* and, quantification of propagules of from redbay ambrosia beetle, 1118
Lauter, N., S157
Lava Kumar, P., S92, S113, S117, S126
Lavigne, C., 1373
Lawrence, A., S112
Lawrence, C., S158
Lawrence, K. K., S170
Lawrence, K. S., S20, S21, S65, S86, S118, S153
Lawrence, N., S114
LC-M/MS, for mycotoxin detection, S108
Le, M. H., S68
Leach, J. E., S127, S157, S164, S167
Lea-Cox, J., S51
Leaf wetness duration
Alternaria alternata on citrus, temperature and, S85
wheat disease epidemiology and, S76
Leafhoppers. *See Graminella nigrifrons*; *Macrosteles quadrilineatus*
Leal, R. Acosta-, 1204
Leandro, L., S30, S187, S188
Leandro, L. F., S80
Leatherleaf fern. *See Rumohra adiantiformis*
Lecanosticta acicola, PCR for detection of in pine, 105
Lecoq, H., 1373
Ledbetter, C., S119
Lee, I., S29, S69, S135, S208
Lee, I.-M., S206
Lee, M., S24, S25, S68, S71
Lee, R., S77
Lee, R. D., S57
Lee, R. F., S46, S107
Lee, S., S204
Lee, S. A., 539, S68
Lee, S.-W., 1089
Lee, Y., S25, S41, S62, S64, S65, S96, S97
Lefebvre, F., S198
Legler, S., S19
Legler, S. E., 1321
Legreve, A., S26, S58
Legrève, A., 474
Lehman, B., 539
Lehman, M., S181
Leibman, D., 225, 798
Leifsonia xyli, on sugarcane, rtPCR method for analysis of early colonization, S21
Leisner, S. M., S107, S144
LeJeune, J. T., S155
Lemaire, O., 384
Leman, S., 208
Lemmetty, A., S88
Leng, Y., S69
Lentinula edodes (Shiitake), global expansion in gourmet and medicinal cultivation, S163
Lenzi, L., 58
Leonard, W., S69
Leonberger, A. J., S69
Leon-Reyes, A., S160
Lepoint, P., 474
Leptosphaeria spp., on canola
screening for resistant lines, S77
TaqMan assay for detection and differentiation of, S69
Lerat, S., 91
Lesion nematodes. *See Pratylenchus penetrans*
Leslie, J. F., 904
Lesniak, K. E., S69
Letousey, P., 424
Lettuce
Bremia lactucae on, S66
Rhizoctonia spp. in, S13
Sclerotinia spp. on, S24, S91
Verticillium dahliae on, S8
Leuconostoc mesenteroides, on sugar beet, cultivar selection for resistance, S123
Leung, H., S11, S157
Leveau, J., S158
Leveillula taurica, and biochar, induction of systemic resistance against, 913
Levesque, C., S153
Lévesque, C. A., 732, S150
Levy, L., S73
Lewandowski, D., S69
Lewandowski, D. J., S70, S191
Lewis, K. J., S132
Lewis, P., S70
Lewis, R., S116
Lewis Ivey, M., S155
Lewsey, M. G., S70, S147
Li, B., S70, S75
Li, C., S104
Li, F., S140
Li, G., S133
Li, H., 551, 890, S35, S39
Li, H. P., 183
Li, J., S71, S72
Li, N., S38
Li, P., 822
Li, Q., S133
Li, R., S71, S72, S101, S140
Li, S., S70, S70 S75, S127
Li, W., S70, S134
Li, X., 183, 573, S69, S70
Li, Y., S71, S105
Li, Z., S70
Liang, S. S., 313
Liang, Y., S130
Liang, Z., S118
Liao, C., S71
Liao, H., S72
Liao, Y. C., 183
Liberti, D., S201
Liesche, R., S53
Life sciences, dual-use research in, S70
Lignin biosynthesis, in sorghum, resistance against *Fusarium* spp. and, 671, S37, S185
Ligustrum, new ilarvirus infecting, S112
Lijuan, Z., S30
Lim, H., S71
Lim, H.-J., 1089
Lim, K., S188
Lima bean. *See Phaseolus lunatus*
Limay-Rios, V., S180
Lime-sulfur, for sooty blotch and flyspeck on apple, S197
Lin, H., S30, S41, S71, S72
Lin, J., S105
Lin, L., S71, S72
Lin, Y., S1
Lindeberg, M., S72
Lindow, S. E., S136
Ling, K., S72, S139
Lipopeptides, differential roles of in plant host defenses and pathogen suppression, S158
Lipopolysaccharide, of *Xanthomonas axonopodis* pv. *citri*, biofilm formation and virulence, S71
Lipoxygenases, and *Aspergillus flavus* on maize, aflatoxin accumulation and, S96
LiPuma, J. J., S31
Lithocarpus densiflorus (tanoak), *Phytophthora ramorum* on, S115, S167
Little, C. R., S90, S106
Little, D., S102
Littlefield, L. J., S153
Liu, B., S73
Liu, C. J., 1276
Liu, H., S44, S72, S74, S140
Liu, J., S105
Liu, L., S188
Liu, Q., S73
Liu, R., S73
Liu, T., S105
Liu, W., S73
Liu, X., S74
Liu, X. L., 1162
Liu, Y., S74
Liu, Y. X., 1276
Liu, Z., S73, S74
Livingston, W. H., S195
Lloyd, A. L., 959
Loblolly pine. *See Pinus taeda*
Locke, J. C., S74
Loebenstein, G., 225
Lolium perenne (perennial ryegrass)
isoparaffin-based oil for controlling dollar spot and gray leaf spot in, S208
temperature shifts and, de-acclimation/re-acclimation response, S184
Long, D., S131
Long, S., S120
Longidorus iranicus, in Golestan National Park in Iran, S124
Loope, L., S128
Loper, J. E., 1330
Lopes, S., S74
Lopes, U. V., S42
López, C. E., S127
Lopez Nicora, H., S74
Lord, W., S196
Lore, J., S136
Lorek, J., S158
Loschinkohl, C., S1
Lou, V., S30
Lourenço, E., 300
Lourenço, S. A., S41
Louws, F., S73
Louws, F. J., S21, S73, S106, S109
Low 18:1- derived defense pathway, WRKY proteins and, S38
Lozano, G. L., S39
Loza-Reyes, E., S35
Lozovaya, V. V., 897
Lsi genes, for silicon transport in wheat, S196
Lu, H., S151
Lu, P., S202
Lu, Q. L., 313
Lu, S., 1298, S44, S151
Lu, X., 931, S70, S75, S100
Lu, X. H., 1162, S74
Lubberstedt, T., S184
Lucas, J. A., S12, S51
Luckman, G. A., 460
Lumazine synthase, in transgenic tobacco, ectopic expression and defense responses, 573
Luna fungicides, for control of disease of horticultural crops, S37
Lund, S. P., S136
Luo, L., S72
Luque, A., 58
Luster, D. G., S75, S127, S202
Lygin, A. V., 897
Lyngkjær, M. F., 21
LysM-containing receptor-like kinase 1, and chitin signaling and fungal resistance in *Arabidopsis*, S68
Lysobacter enzymogenes, type IV pili of, S98

Ma, B., S75, S76
Ma, H. X., 1276
Ma, J., 1276, S75
Ma, J. X., 522
Ma, L., S64, S75
Ma, P., S70, S75
Ma, W., 593, S206
Ma, X., 551
Ma, Z., S132
Macana virus disease, *Olpidium virulentus* on fique in Colombia, S42
Macaulay, K., S70
MacDonald, A., S70
MacDonald, J. D., 871, S104
MacDonald, W. L., S167
MacGuidwin, A., S26
MacGuidwin, A. E., S180

MacHardy, W. E., S196
Machbash, Z., 798
Mackasmiel, L., S84
Mackenzie, S., S75
MacLean, D., S70
Macroarrays, for detection of turfgrass pathogens, S90
Macrophomina phaseolina
on cluster bean, S23
on medicago, S118
on soybean, S31
on sunflower, S128
Macrosteles quadrilineatus (aster leafhoppers), aster yellows phytoplasma and, S33
Madagascar periwinkle. *See Catharanthus roseus*
Madariaga, M., S110
Madden, L., S132, S137
Madden, L. V., 160, 784, 1015, S6, S65, S66, S81, S113
Maddux, L. D., S41
Madeiras, A. M., S195
MADS-box family of transcription factors, in *Fusarium verticillioides*, S94
Maejima, K., S52
Maffia, L. A., S121
Magarey, P. A., 1240, S38
Magculia, N., S136
MAGIC (Mutant-Assisted Gene Identification and Characterization), S11
Magill, C. W., S106
Magnaporthe spp.
M. grisea, QTL in *Japonica* rice landrace responsible for broad-spectrum resistance to, 822
M. oryzae
AVR-Pita gene of, 612, S204
Bacillus spp. for inhibition of, S106
bZip proteins in, S65
conidiation of, genes expressed during, S62
ethylene biosynthesis and resistance to, S49
Forkhead-box protein in, S97
genetic stability of isolates on host and artificial media, S97
MoCDC15, conidiation and pathogenicity, S41
Nep1-like toxin from, S74
nitroalkane dioxygenases in morphogenesis and infection, S137
Pi34 gene and resistance against, S63
Pigm gene and broad-spectrum resistance, S49
Pik locus of rice and, S96
Pi-z(t) gene and, S202
PWT1 avirulence allele of and recognition by wheat and barley, 436
rice *PROPEP1-7* and, S73
Magnusson, V., S18
Mahmoodi, B., S13, S113
Mahoney, N. E., S95
Mahto, B. N., S76
Mahtour, A., S76
Mahuku, G., S119
Maia, G. S., S40, S174
Maier, T., S58
Maier, T. R., S186
Mailhot, D. J., 941
Maize. *See Zea mays*
Maize fine streak virus (MFSV)
plant host range and leafhopper transmission of, 1138
production of in *Drosophila* S2 cells, factors influencing, S26
transient expression of in *Drosophila* S2 cells, S184
Maize streak virus (MSV), resistance in test crosses of early generation lines, S113
Majerczak, D. R., S27, S184
Malapi-Nelson, M. M., S76
Malus × *domestica* (apple)
apple proliferation (AP) disease of, 390
Botrytis cinerea on, S63, S143, S163
Candidatus Phytoplasma mali and, 863
Colletotrichum gloeosporioides on, S122
Erwinia amylovora on, 532, S12, S68
multiple virus infections in, in Colorado, S101
Penicillium expansum on, S2, S63, S93, S163
sooty blotch and flyspeck fungi on, 345, S15, S54
Venturia inaequalis on
fungicide resistance in, S23, S27, S100, S183, S189
post-harvest foliar urea sprays for, S196
winter pruning and powdery mildew, S51
Malvick, D., S185
Malvick, D. K., S14, S66, S187
Mammella, M. A., S76
Manabayeva, S. A., S76
Mandal, M. K., S58
Mandevilla splendens, *Pseudomonas savastanoi* on, S104
Mango malformation disease (MMD), *Fusarium mexicanum* and, 1176, Cover photo November
Manihot esculenta (cassava)
cassava frogskin disease of, S5
Xanthomonas axonopodis pv. *manihotis* on, S8, S86, S127
Manjunath, K. L., S46, S77, S107
Mankolo, R. N., S91
Mann, R. B., S167
Manners, J., S75
Manners, J. M., 1276
Manning, V. A., S160
Mano, E. T., S77
Manoranjitham, K., S101
Manosalva, P., S77
Manosalva, P. M., S164
Mansfield, M., S77
Mansfield, M. A., 732, S195
Mansfield, M. E., S77
Mantoe, L., S66
Manulis-Sasson, S., 252, S22
MAPK (Mitogen-activated protein kinases), in *Cochliobolus sativus*, S69
Marafivirus sp., in blackberry, S112
Marahatta, S. P., S133
Maraite, H., 474, S32
Marçais, B., 105, 1262
Marchites spp., on oil palm, in Peru, S125
Marek, S., S131
Marek, S. M., 415, S7
Marett, C. C., S190
Margenthaler, E., S129
Marin, D. R., S118, S119
Marino, D. A., S77
Markell, S., S185
Marlow, G., S111
Marois, J., S181
Marois, J. J., 941, 1111, S122, S143, S178, S186, S204
Maroof, S., S189, S190
Maroon-Lango, C. J., S1, S78
Marques, A., S114, S207
Marquez-Villavicencio, M., S78
Marra, R. E., S195
Marrero, G., S78
Marsh, A. G., S66, S207
Martin, B., S152
Martin, F., S14
Martin, F. N., 732, 1231, S14, S76, S78, S150, S152
Martin, G. B., S92
Martin, K., S11
Martin, R., S67
Martin, R. R., 698, S106, S110
Martinez, M. C., S178
Martinez, M. T., S89
Martinez-Espinoza, A., S78
Martínez-Medina, A., 682
Martínez-Romero, E., S20
Martinka, M., S67
Martins, T. D., S78
Maruthachalam, K., 1222, S8, S64, S79, S107
Marx, B. D., S115
Marzachì, C., 805
Mascher, F., 855
Massad, E., 1042
Massola, N. S., S86
Master gardeners, *Sick Plants and a Hungry World* online course for, S33
Mastouri, F., 1213, S165
Masunaka, A., 120
MAT (mating type) loci genes
for differentiation of *Pyrenophora teres* f. *teres* from *P. teres* f. *maculata*, 1298
of *Pyrenophora tritici-repentis* on wheat, genetic diversity of, 474
Matheron, M. E., S79
Matias, A. C., S99
Mating pheromones. *See* Pheromones
Matsushita, N., 747
Matthews, B. F., S127
Mattupalli, C., S79, S188
Matute, E. J. Graterol-, 172
Maul, J., S51, S207
Mauzey, S. J., S79
Mavrodi, D., S142
Mavrodi, O., S142
Mavrodieva, V., S73
Mayetiola destructor (Hessian fly), *H* gene and resistance to, 279
Mayfield, A. E., S177
Mayfield, D. A., S15, S54
Maymon, M., 1176
Maynard, C. A., S10, S29, S89, S91
Mayo, J. B., S120
Mazzola, M., S134
Mbofung, G. C., S80
McAvoy, E., S107
McCabe, K. J., S124
McCall, D., S28, S205
McCall, D. S., S80, S152, S208
McClean, A., S80
McCluskey, K., S80
McCoy, S., S122
McCue, K. F., S101
McCullough, P., S78
McDonald, B. A., 172, 855
McDonald, M., S59, S60, S99, S117, S125
McDonnell, K., S17
McDowell, J., S158
McFarland, K., S195
McGahan, D., S16
McGhee, G. C., S166
McGrath, J., S47
McGrath, M., S80, S161
McGrath, M. T., S20, S102, S196, S197
McInroy, J. A., S63, S170
McKenna, F., S34
McKenzie, D., S163
McLeod, A., S20, S52
McMahon, M. B., S75
McMillan, R. T., S174
McMullen, M., S4, S137
McMullen, M. D., 72
McMullen, M. P., 160
McNally, R. R., S80
McNellis, T. W., 539, S68
McPhee, K., S25
McRoberts, N., S81
McSpadden Gardener, B., S158, S159
McSpadden Gardener, B. B., S20, S96
Meacham, T., S61
Meah, B., S11
Mealybugs, and grapevine leafroll viruses, virus-vector specificity in, 830

Medicago truncatula
Asian soybean rust and switchgrass rust on, S129
Macrophomina phaseolina on, S118
Phakopsora pachyrhizi on, S54
Medina, C., S110
Meekes, E., S81
Mefenoxam
for *Phytophthora capsici*, S20, S195
for *Phytophthora erythroseptica* on potato, S183
Mehl, H. L., 150, S81
Mehle, N., S81
Mehra, L., S81
Meinhardt, S., S151
Meitz, J. C., S20
Mejia, J. F., S5
Mekete, T., S74
Mekuria, T., S81, S90
Melaleuca quinquenervia, *Puccinia psidii* on, differences in susceptibility and disease development, S108
Melanin, in *Mycosphaerella graminicola*, *MCC1*-encoding c-type cyclin and, S25
Melanson, R., S47
Melcher, U., S10, S18, S110, S121, S154
Melito, S., S26
Mellinger, C., S134
Melnick, R., S82
MeloCon WG
for control of nematodes and soil-borne disease in vegetable production, S50
for nematodes and soil borne diseases in fruiting vegetables, S200
Meloidogyne spp. (root-knot nematodes)
annular rings for enhancing photographs of perineal patterns of, S32
M. incognita
activity of monoterpenoids against, 199
on cotton, S75, S202
on cucurbits, S35
Gymnoascus reessii for control of, S105
secretory protein of interacts with golgi-associated host plant protein, S141
on tobacco, S28
on tomato in Egypt, S1
on yellow squash, S31
M. javanica, on carrots, S135
quantification of eggs produced by, S62
on tobacco, and host-derived RNAi targeted to novel parasitism gene, S116
Melon. *See Cucumis melo*
Melon necrotic spot virus (MNSV), in cucumber, S69, S191
Melotto, M., S24, S91
Melzer, M. J., S82
Mendoza, P., S99
Meng, B., S104
Meng, F., S55
Meng, Q., S82
Meng, Y., S56
Mengistu, N., S191
Menkir, A., S113, S117
Mentha sp. (mint)
Tobacco ringspot virus and *Strawberry latent ringspot virus* in, S109
Verticillium dahliae on, S77
Mentreddy, S. R., S91
Mergoum, M., S104
Merighi, M., S27, S184
Mersha, Z., S82, S115
Mertely, J. C., S83, S174
MES1 gene, and systemic acquired resistance against *Phytophthora infestans* in potato, S77
Metabolic fingerprinting, for *Fusarium verticillioides*, S120
Metam sodium, microbial aspects of accelerated degradation of in soil, 367
Methyl bromide, alternatives to, for nematodes and soil borne diseases in fruiting vegetables, S200
Methyl isothiocyanate (MITC), microbial aspects of accelerated degradation of in soil, 367
Metrafenone, for control of *Plasmopara viticola* and *Erysiphe necator* on grape, S136
Meyer, F. W., S197
Meyer, P. W., S188
Meyers, B. C., S66, S207
MfPG genes, in *Monilinia fructicola*, regulation and functional characterization of, S25
Mian, R., S192
Michailides, T. J., 1340, S48, S83, S141
Michel, A. P., S33
Microarrays
for universal plant virus detection and identification, S10
viruses and, S154
Microbial Rosetta Stone (MRS) Central, overview of, S59
Micro-RNAs (miRNA), in host infected with *Grapevine leafroll-associated virus 3*, S3
Microsatellite markers
for assessment of diversity of *Phytophthora sojae*, S123
for taxonomic identification of *Phytophthora* spp., S29
Miedaner, T., 904
Miglino, R., S81
Miklas, P. N., 972
Mila, A., S14
Mila, A. L., S100
Miles, T. D., S9, S83
Milgroom, M. G., 1185, S20
Milks, D., S55
Miller, J. D., S180
Miller, M., S65
Miller, S. A., S13, S20, S33, S124, S140, S155
Miller, S. I., S160
Miller-Butler, M., S83
Millhouse, J., S191
Milling, A., S55, S115
Milstop, for control of powdery mildew on cucurbits, S80
Milus, E. A., S203
Mimee, B., S193
Minenkova, O., S143
Ming, R., S182
Mingora, C., S94
Minsavage, G. V., S103
Mint oils, for control of *Rhizoctonia solani* on tomato, 493
Minz, D., 367
Minzenmayer, R. R., S54
Mirzaee-Qomi, M., S83
Mirzaee-Qomi, P., S84
Misaghi, I., S122
Miscanthus × *giganteus*
plant diseases in, S3, S180
potential viral threats to in United States, S3
response to fungal pathogens, S17
Misra, A. K., S96
Mitchell, F. L., S88
Mitchell, M. N., S84
Mitchell, T., S10
Mitchell, T. K., 415
Mitchum, M., S187
Mitchum, M. G., S58, S108, S116, S132, S186
Mitkowski, N. A., S23
Mitochondrial haplotype analysis, for differentiation of *Verticillium dahliae* races, 1231, S78
Mitra, A., S38, S67
Mittal, S., S54, S129
Mitter, N., S10
Miwa, E., S143
Mixed-modeling approaches, for characterizing profiles of time-varying response and predictor variables, 1015
Miyamoto, Y., 120
Mizzau, M., 390
Mlo locus, and resistance of barley against *Blumeria graminis* f. sp. *hordei*, S158
MLST. *See* Multilocus sequence typing
Mmbaga, M. T., S84
MMD. *See* Mango malformation disease
MoCDC15 gene, and conidiation and pathogenicity of *Magnaporthe oryzae* on rice, S41
Mock, N., S95
Mock, R., S56, S71, S72, S101
Modarresi Chahardehi, A., S84
Modeling
for characterizing profiles of time-varying response and predictor variables, 1015
of *Cladosporium caryigenum*, S98
climate change and, S179
climate change and potato late blight risk, S121
competition between viruses on complex plant-pathogen system, 1042
of efficacies of pathogens in relation to characteristics of biocontrol agent, 814
of *Fusarium graminearum* on barley, S15
of ironwood tree decline in Guam, S115
of *Phytophthora alni*-induced alder decline, 1262
of *Phytophthora infestans* outbreaks, S92
of *Plasmopara viticola* on grape, S194
of *Podosphaera macularis* on hop, S40
of *Pseudoperonospora cubensis*, 959, S202
of *Puccinia striiformis* f. sp. *tritici* long-distance transport, S132
of *Puccinia triticina*, S32
of *Sclerotinia sclerotiorum*, S89, S184
of selection for fungicide resistance, S51
of septoria wheat leaf blotch, S32, S63
SkyBit for, S46
Moeller, J., S188
Mohammad Deimi, A., S84
Mohammadi, A., S85
Mohammadi, M., S85
Mohan, K., S113
Mohd Jaaffar, A., S85
MoHOX2, in *Magnaporthe oryzae*, expression during conidiation, S62
Momol, T. M., S22, S173
Monacell, J. T., S85, S92, S157
Monarda spp., essential oils from, for control of *Rhizoctonia solani* on tomato, 493
Mondal, S. N., S85, S86, S174
Monfort, W. S., S121
Monger, W., S154
Monilinia spp.
cytochrome b gene and fungicide resistance, S50
M. fructicola
on decayed stone fruits in West Virginia, S56
on peach, S119
polygalacturonase genes of, S25
Moniliophthora perniciosa, on cacao, genetic variation and adaptation of isolates in Brazil, S42
Monosporascus cannonballus, on melon, *Olpidium bornovanus* and, S122
Monoterpenoids, activity of against *Meloidogyne incognita*, 199
Monteiro-Vitorello, C. B., S21
Montenegro, N., S86
Montesinos-Herrero, C., S86
Montmorency stem pitting virus (MMSPV), in sweet cherry, S130
Montoya Piedra, Y., S125
Montpetit, J., S196
Moore, G. A., S61
Moore, G. G., S157
Moore, J. A., 279
Moore, S. R., S86

Moore, W. F., S112
Moorman, G., S51
Moorman, G. W., S153
Mora, R., S110
Moraes, S. G., S86
Moral, J., 1340, S86
Morales, J. G., S40, S87
Morales Ruiz, S. S., S125
Morales-Payan, J., S176
Morales-Pedraza, L. G., S87
Morano, L., 601
Morano, L. D., S115, S116
Moreau, J., S26
Moreira, A. S., S87
Moreira, R., S42
Morgan, D., S83
Morid, B., S32, S62, S101
Moriones, E., S82
Morisaka, H., 1289
Moriwaki, J., 612
Morris, C. E., 208
Morris, T., S105
Morrison, E. N., S87
Morse, J. G., S118
Moscou, M., S157
Motavalli, P., S41
Mottet, M.-J., S196
Mou, B., S107
Moulin, M., S70
Mount, L. L., S174
Mousavi, L., S87
Moya, E. A., S87
Moyer, M. M., 1240, S38, S88
Mozafari, J., S84, S87
Msikita, W., S88
Mu±oz, M. P., S110
Mueller, D. S., S14, S182
Mueller, J. D., S153
Muilenberg, M. M., S208
Mukhina, Z. M., S64
Mulard, G., 1352
Mulat, H. K., S88
Mulcahy, A., S93
Mulch
  bio-enhanced organic for control of nutsedges in tomato, S176
  with biofungicides for managing diseases in tomato in, S91
  polyethylene, for managing diseases in organic tomato production, S91
Multilocus sequence typing (MLST), of *Xylella fastidiosa* causing Pierce's disease and oleander leaf scorch, 601
Mung bean. *See Vigna radiata*
Munkvold, G., S28, S30, S36, S148, S185
Munkvold, G. P., S109, S180, S184
Muñoz, M. P., S110
Muñoz-Díez, C., 1340
Munyaneza, J. E., S88
Mur, L. A. J., 21
Muramoto, J., S19
Murphy, A., S147
Murphy, A. M., S70
Murphy, D., S200
Murphy, J. A., S109, S197
Murphy, J. F., S118, S130
Murray, J., S182
Musa spp. (banana, plantain)
  benlate and, S170
  Cylindrocladium spathiphylli on, S58
  Fusarium oxysporum f. sp. *cubense* on, S146
  Mycosphaerella fijiensis on, S5, S58
Musetti, R., 390
Mushroom
  disease management in commercial facilities, S164
  global expansion in gourmet and medicinal cultivation, S163
Muskmelon. *See Cucumis melo*
Musso, C., 805
Musson, G. H., S37, S100
Mustard cover crops, for management of *Phytophthora capsici* on cucurbits, S126
Mutschler, M. A., S147
Myclobutanil
  for *Podosphaera xanthii*, S16
  for *Venturia inaequalis*, on apple, S23
Mycorrhizal infection, and sorghum allelopathy against wheat, S2
Mycosphaerella spp.
  M. fijiensis, on banana, S5, S58
  M. graminicola
    airborne inoculum of during growing season in Belgium, S26
    MCC1-encoding c-type cyclin, S25
    NOXa and pathogenicity, S25
    succinate dehydrogenase inhibitor for, S12
    on wheat, S45
Mycotoxins
  of *Aspergillus* section *Nigri* on maize and peanuts, S10
  diversity of in *Aspergillus pasasiticus* and *A. flavus*, S157
  Fusarium graminearum and, 290, 436
  in maize, S4, S109
  testing for using LC-MS/MS, S108
Mycoviruses
  in grapevines, S5
  from *Rosellinia necatrix*, 922
Myers, B. A., S88
Myers, K. L., S52
Myers, M., S42
Myrothecium verrucaria, effect of surfactants on conidial germination, S57
Mysore, K. S., S54, S129, S160

Ñ-stez, C. E., S87
Nadal, M., 1364
Nadler, S. A., S113
Nagashima, S., 612
Naidu, R. A., 698, S3, S45, S56, S81, S101
Nair, S., S116
Nakajima, T., 763, S63
Namba, S., S52
Narvaez, D. F., S143, S178, S186, S204
National Clonal Germplasm Laboratory, S3
National Plant Diagnostic Network (NPDN), S168, S177, S181
National Plant Microbial Germplasm Collection, S167
National Science Advisory Board for Biosecurity (NSABB), S70
Natwick, E. T., S12, S138
Naumann, T. A., 645, S88
Nava, C., S89
Navarre, D., S38
Navas-Castillo, J., 582
Navi, S. S., S89, S144
Neal, J. C., S102
Nearctaphis bakeri, and transmission and evolution of *soybean dwarf virus*, S126
Neate, S. M., S43
Nectarine. *See Prunus persica*
Negeri, A., S11
Neil, G., S93
Nelson, B. D., S4, S102, S111
Nelson, L., S191
Nelson, M. E., S40, S73, S138, S188
Nelson, R. J., S156
Nelson, R. S., S142
Nelson, S. C., S82
Nematodes. *See also Specific nematodes*
  cereal cyst nematode, 216
  on corn in midwest, S180, S182
  effector proteins of, mode of action, S179
  evaluation of brassicacious greens for control of, S123
  Longidoridae and Trichodoridae from Golestan National Park in Iran, S124
  surface coat proteins of, during host pine infection and in vitro culture, 1289
Nemchinov, L. G., S208
Nepal, A., S89, S189
Nephelium lappaceum (rambutan)
  fungal diversity associated with in Puerto Rico, S176
  Pestalotiopsis thea and *Lasiodiplodia theobromae* on, in Mexico, S89
NepI-like proteins, of *Magnaporthe oryzae*, rice protein interacting with, S74
Nepoviruses, characterization of by integrated approach, S81
Net form net blotch (NB), of barley, resistance loci for, 80
Nettleton, D., S58, S136
Network biology, for quantitative genetic variation altering signaling in both plant host and generalist pathogens, S165
Neu, K., S23
Neufeld, K., S89
Neufeld, K. N., 959, S202
Neves, A. A., S77
New York State Agricultural Experiment Station (NYSAES), partnership with Geneva City School District, S20
Newcomb, M., 986
Newhouse, A. E., S89
Newman, M. A., S153, S202
Newsom, L. J., S57, S131
Nga, N. T. T., 436
Ngugi, H. K., 539, S11, S46, S49, S68, S100
Nguyen, H. V., S160
Niblack, T., S185
Niblack, T. L., S74
Nichols, A., S28
Nichols, A. E., S80, S208
Nickerson, J., S70
Nicotiana spp. (tobacco)
  Cucumber mosaic virus in, S147
  lumazine synthase in, 573
  Meloidogyne spp. on, S116
  Phytophthora nicotianae on, S97
  Ralstonia solanacearum on, S14, S100
  root knot nematodes on, S28
  Tobacco curly shoot virus in, S52
  Xylella fastidiosa on, S29
Nie, J., S69, S70
Nieto, D., S89
Nightengale, S. P., S20
Nikolaeva, O., S61
Nischwitz, C., S89
Nishiguchi, M., S90
Nishizawa, Y., 85
Nissen, L., S199
Nissinen, A., S88
Nita, M., S90
Nitric oxide, and *Fusarium verticillioides* on maize, S10
Nivalenol, *Fusarium graminearum* on wheat and, 763
Njambere, E. N., S90
Noel, M., S136
Noguchi, M. T., 612
Nolan, S., S17
Noll, L. W., S90
Norman, D. J., S15, S90, S103
Northern, L., S89
Northern, L. C., S91
Norton, R., S196
Nosir, W., S95
NOXa, *Mycosphaerella graminicola* pathogenicity and, S25
NSm proteins, common functional domains of, S70
Nucleic acids, collection and assessment of, assessing new biomaterials for, S19
Nunney, L., 601

Nusbaum, C., S68
Nuss, D. L., S135
Ñústez, C. E., S87
Nutter, F., S183
Nutter, F. W., S42, S186, S188
Nutter, Jr., F. W., S181, S188
Nutter Jr. F.W., 931
Nyochembeng, L. M., S91
NYSAES. *See* New York State Agricultural Experiment Station

Oak. *See Quercus* spp.
Oak, S. W., S150
Oat. *See Avena sativa*
Obanor, F., 1057
Obasa, K., S91
Obert, D. E., 484
O'Brien, G. K., S178, S204
Obulareddy, N., S91
Occ gene cluster, and occidiofungin production by *Burkholderia contaminans*, S44
Occidiofungin, from *Burkholderia contaminans*, *occ* gene cluster and, S44
Ochoa Corona, F. M., S7, S19, S30
Ochratoxin A, in California raisins, and *Aspergillus* spp., S95
Ocimum basilicum (basil)
  Peronospora belbahrii on, S9, S107, S196, S198
  Peronospora sp. on, in Florida, S175
  Plectosporium tabacinum on, in U.S., S32
Ockey, S. C., S91
O'Connell, S., S109
O'Donnell, K., 58
Oerke, E., S156
Ofek, M., 367
Ogata, D. Y., S82
Ogle1040 locus, and resistance of wheat against *Puccinia coronata*, 484
Ogunsola, K. E., S92
Oh, C., S92
Ohtani, K., 85, 120
Oidium neolycopersici, tomato, climate change and, S33
Oikawa, Y., 922
Oikonomakos, I., S7
Ojiambo, P., S89, S190
Ojiambo, P. S., 959, 1066, S128, S144, S202, S204
Ok, C., S92, S102, S197
Okano, Y., S52
Okazaki, S., 560
O'Keefe, G., 539
O'Keeffe, T. L., 532
O'Keeffe, T. L., S95
Okuda, M., 560
Okuda, S., 560
Olanya, M., S67, S92
Olarte, R. A., S92, S157
Olatinwo, R. O., S92
Olaya, G., S55, S66, S93
Olea europaea (olive)
  Botryosphaeriaceae collected from in Spain and California, characterization and pathogenicity, 1340, Cover photo December
  branch dieback of, in California, S129
  Colletotrichum acutatum on, S86
  diseases of in Argentina, S99
  pervasive latent viral infection of in National Clonal Germplasm Laboratory, S3
Oleander leaf scorch, *Xylella fastidiosa* and, multilocus sequence typing for, 601
Oleic acid, low 18:1, and signaling and plant defense, S38, S58
Oligoadenylate system (OAS) system, broad-spectrum virus resistance using, S38
Oligogalacturonides, and defenses in wheat against powdery mildew, 1352
Olive. *See Olea europaea*
Oliveira, F. R., S21
Oliver, J. E., S93
Oliver, R., S151
Olivera Firpo, P., S93
Olpidium spp.
  O. bornovanus, and *Monosporascus cannonballus* on melon, S122
  and *Melon necrotic spot virus* in cucumber, S191
  O. virulentus, and Macana virus disease on fique in Colombia, S42
Olson, B. D., S161
Olson, H. A., S94
Olson, M. E., S48
OmpA family outer protein, of *Xanthomonas albilineans* on sugarcane, S111
O'Neal, M., S182
O'Neill, N. R., S208
Ong, K., S123
Ong, K. L., S199
Ongena, M., S158
Onion. *See Allium cepa*
Onoue, M., 922
Oomycete Undergraduate Molecular Genetics Network (OUMGN), *SPACES* site, update on, S94
Oomycetes
  population genetic insights into emergence of, S150
  sequence-based identification of, promise and pitfalls of, 732
Ophiognomonia clavigignenti-juglandacearum, reclassification from genus *Sirococcus*, S17
Ophiosphaerella spp., on bermudagrass
  GFP and RFP in, 415
  multilocus phylogeny of, S131
Ophiostoma sp., on *Pinus* spp. in Lebanon, S111
Opit, G., S30
Orchids. *See* Cattleya orchids; *Phalaenopsis* orchids
Ordoñez, M. E., 376
Organic produce
  fungicides and, for *Colletotrichum orbiculare* on cantaloupe, S35
  mushrooms, S164
  tomato, bio-enhanced organic mulch for control of nutsedges in, S176
Organocide, for control of powdery mildew on cucurbits, S80
Oriolani, E., S99
Ormeño-Orillo, E., S20
Ornamental flowering cherries, leaf spot disease in, S84
Orobanche spp. (broomrape), biological control of by *Fusarium* isolates, S34
Orr, G., S166
Ortega, M. A., S189
Ortega-Beltran, A., S39
Ortiz, B. V., S86
Ortiz, C., S94
Orvego, for *Peronospora* and *Pseudoperonospora* control in ornamentals, S60
Oryza sativa (rice)
  and *AVR-Pita1*, 612
  bioinformatic strategies for predicting candidate genes in disease resistance, S164
  Bipolaris oryzae on, S11
  Burkholderia glumae on, S96
  chromomethylase in, S90
  Magnaporthe oryzae on, S97, S137
  OsPROPEP1-7 (elicitor precursor genes) of, S73
  protein interacting with NepI-like protein of *Magnaporthe oryzae*, S74
  Pyricularia oryzae on, S145
  resistance to rice bacterial blight, D-allose and, 85
  Rhizoctonia oryzae-sativae on, 493
  Rhizoctonia solani on
    in Arkansas, multilocus analysis, S22
    divergence from maize-infection populations of, 172
    phenotyping the components of resistance, S136
    plant growth-promoting rhizobacteria and, S170
    screening for bacterial antagonists, S146
  Southern rice black-streaked dwarf virus in, S146
  Ustilaginoidea virens on, in Arkansas, S125
  Xanthomonas oryzae pv. *oryzae* on, AroQγ chorismate mutase and rice virulence, 262
  yield losses with sheath blight diseases of, S201
Osborne, L., S137, S185
Osborne, L. E., S59
OSCAR (One Step Construction of Agrobacterium Recombination-ready plasmids), S98
Oshima, K., S52
Osler, R., 390
Osorio, D. L., S42
Ospina-Giraldo, M. D., S94
Osterbauer, N., S135
Oswald, A., S20
Otero, M. L., S99
Otero-Colina, G., 1176
Otrosina, W. J., S94
Otto-Hanson, L. K., S122
Oudemans, P., S27, S101
Oudemans, P. V., S94
Ouimette, D. G., S95
Owen, J., S142
Owens, A., S112
Owens, R., S95
Owens, R. A., S135
Ownley, B. H., 493, S2, S44, S45, S131
Oxalic acid
  production by *Postia placenta*, S21
  Sclerotinia sclerotiorum and, S58, S151, S160
Ozone gas
  for control of postharvest decays of tomato, S33
  response of *Aspergillus flavus* to sublethal level of, S138

p25 gene, *Beet necrotic yellow vein virus* and, breakdown of host resistance, 127
Padgett, G. B., S115, S153
Paecilomyces lilacinus, for control of nematodes and soil-borne disease in vegetable production, S50
Pagan, C., S113
Pahalawatta, V., S95
Pak choy. *See Brassica rapa*
Palenchar, J., S174
Palencia, E., S10
Palm, M., S168
Palmateer, A. J., S22, S104, S125, S174, S175
Palmer, C., S60
Palmer, J., S11
Palmero, D., S29, S39, S95
Palmero Llamas, D., S95
Palm-Hernandez, M. E., S175
Palms. *See Phoenix* spp.
Palou, L., S86
Palumbo, J. D., 532, S95
PAMDB (Plant-Associated Microbes Database), overview of, 208
Pan, Q., S96
Pan, R.-Q., S96
Pan, R.-W., S96
Panchal, S., S91
Pandelova, I., S160
Pandey, A. K., S96
Pandey, R., S67
Panella, L., 689
Panicum virgatum (switchgrass)
  improvement of root, microbe, and soil interactions for enhanced value of, S40

plant diseases in, S180
potential viral threats to in United States, S3
survey of diseases of in Tennessee, S131
Panstruga, R., S158
Pantocin A, for control of fire blight, S54
Pantoea spp.
P. agglomerans, on maize, S119
P. ananatis, on onion, S144
P. stewartii
on corn, S85, S188
type III secretion system of, S27, S184
P. vagans C9-1
complete genome sequence of, S120
for control of fire blight, 1330, S54, S59
Paolacci, A., 390
Papaya ringspot virus type W (PRSV-W), in watermelon, 1194
Pappu, H., S122
Pappu, H. R., S1, S5, S10
Parasthrephia sp., influence of fallow soil period on, S41
Pardo, J. M., S5
Paret, M. L., S96
Park, B., 732, S97
Park, C., S198
Park, D., S146
Park, J., S25, S64, S96, S97
Park, P., 840
Park, S., S65, S77, S96, S97, S159, S164
Park, Y., S96
Parker, J. K., S29, S97
Parker, P. E., 1030, S15
Parker, S. R., S141
Parkunan, V., S97
Parnell, S., 638, 1030
Pasche, J. S., S135, S183
Pascual, A., 1315
Pascual, J. A., 682
Pasteuria usgae, for control of *Belonalaimus longicaudatus*, S199
Pastor-Corrales, M. A., S98
Pataky, J. K., S98
Patel, N., S98
Pathogen detection lab-on-a-chip (PADLOC) system, development of, S76
Pathogenesis-related (PR) genes, resistance to rice bacterial blight, D-allose and, 85
Paul, C., 756
Paul, P., S132, S137
Paul, P. A., 160, 784, 1015, 1066, S33, S65, S66, S113, S184
Paulitz, T. C., 404, S85, S142
Paveley, N., 21
Paveley, N. D., S51
Payne, A. F., S98
Payne, G. A., S108, S138
Payne, S. A., 279
Paz, J. O., S92
Paz, Z., S64, S98
PCR (polymerase chain reaction) methods
assessing new biomaterials for sample collection and nucleic acid recovery in, S19
immunocapture RT-PCR for detection of viruses, S139
for sensitive detection of a panel of viruses, S72
for simultaneous detection of eight onion pathogens, S77
for simultaneous detection of four viroids, S72
Pe±a, G., S7, S29
Pe±a, J., S53
Pe±a-Reyes, E., S99
Pea. *See Pisum sativum*
Pea enation mosaic virus (PEMV), molecular characterization and ELISA-based detection of, S130
Peach. *See Prunus persica*
Peanut. *See Arachis hypogaea*
Pear. *See Pyrus* spp.
Pear blister canker (PBCVd), multiplex real-time RT-PCR assay for simultaneous detection of four viroids and, S72
Pecan. *See Carya illinoinensis*
Peckham, G. D., S66, S98
Pectobacterium spp.
biological traits of clades, S78
CorA transporter and virulence of, S61
effect of relative humidity on, S31
host-signaling responsive genes of, S3
on potato, detection and identification of, S70
Pedersen, J. F., S37, S185
Pedley, K., S190
Pedley, K. F., S61, S96
Peduto, F., S129
Peet, M. M., S109
Peever, T., S53
Peever, T. L., 120
Pegues, M. B., S46
Peiman Williams, M., S47
Peiris, K., S134
Pelargonium spp., viruses in, self- and cross-interaction studies among coat proteins and their domains, S107
Pelargonium zonate spot virus (PZSV), in tomato, vertical transmission of via seed and pollen, 798
Pelz-Stelinski, K. S., S172
Pena, A., S37
Peña, G., S7, S29
Peña, J., S53
Peña-Reyes, E., S99
Penbotec, for *Penicillium expansum* on pome fruit, S163
Peng, G., S99
Penicillium spp.
P. digitatum, fludioxonil and pyrimethanil and, natural resistance frequencies in, 738
P. expansum
on Anjou pear, 42
on apple, S63, S93, S163
benzimidazole for, S163
reduced sensitivity to pyrimethanil and fludioxonil, S2
P. solitum, on Anjou pear, polygalacturonase from, S58
Pennerman, K., S99
Penthiopyrad
for *Ascochyta rabiei* on chickpea, S125
for *Didymella bryoniae*, resistance against, S9
Pepino mosaic virus, detection and discrimination of different genotypes, S81
Pepper. *See Capsicum annuum*
Pepper golden mosaic virus (PepGMV), in pepper and tomato, viral DNA accumulation and, S50
Percich, J. A., S14
Perdomo, R. D., S4
Peres, N. A., S75, S86, S174
Perez, B. A., S21, S99
Perez, F. G., S52
Pérez, J., S40, S171
Pérez-Alfocea, F., 682
Pérez-Vega, E., 1315
Périnet, P., S196
Periodicity in host availability, evolutionary branching and, *Gaeumannomyces graminis* var. *tritici*, 1169
Periwinkle. *See Catharanthus roseus*
Perkins-Veazie, P., 33
Peronophythora litchii, resistance of against carboxylic acid amide fungicides, 522
Peronosclerospora sorghi, on sorghum, new virulent race of, S106
Peronospora spp.
P. belbahrii, on basil, S9, S107, S196, S198
on ornamentals, Orvego for control of, S60
on sweet basil, in Florida, S175
Peroxidase activity, and potato resistance against *Alternaria solani*, for biochemical evaluation, 454
Perrot, G., 424
Perry, C. D., S202
Perry, K., S99, S100
Perry, K. L., S10, S147, S154
Persea borbonia (redbay), *Raffaelea lauricola* on, 1118, S177
Persea spp. (avocado), *Raffaelea lauricola* on, in Florida, S176
Perumal, R., S106
Pestalotiopsis guepini, on blueberry nursery plants, S99
Pestalotiopsis thea, on rambutan, in Mexico, S89
Peter, K., S100
Peters, R. D., S100
Peterson, G. L., S41
Peterson, N., S53
Peterson, P. D., 14, S100
Pfeufer, E. E., S100
PGPR, *Bacillus* spp. in potato rhizosphere as inoculant source, S20
Phaeomoniella chlamydospora, on grapevine, in Mexico, S87
Phaeosphaeria nodorum, sexual recombinants of and epidemics caused by, 855
Phakopsora pachyrhizi
germination of urediniospores, water vapor, liquid water and, S16
immunodiagnostic assays targeted to urediniospore wall proteins of, S75
on Jicama in U.S. and Florida beggerweed in Alabama, S29
kudzu resistance to, 941
on *Medicago truncatula*, S54, S129
on soybean
combinatorially selected peptides for protection against, 1111
effect of solar radiation on disease severity, S143
gene expression during appressorium formation by, S37
influence of environmental conditions on epidemic development, S128
protein profile differences between resistant and susceptible strains, S96
proteomics for identification of markers for resistance, S164
Rpp2 locus and resistance, S96
screening for resistant lines, S61, S203
sentinel plots in Florida, S178, S204
Simplicillium lanosoniveum for control of, S134
transcriptome analysis of interactions, S127
virulence and genetic diversity in Nigeria, S190
on soybean in Minnesota, five years of monitoring, S66
urediniospore detection, S131
urediniospore recovery, DNA extraction and, S185
weather patterns and distribution of in U.S., S92
Phalaenopsis orchids
Capsicum chlorosis virus from, S146
Sclerotium rolfsii and *Dickeya* sp. from, S22
Phaseolus spp. (bean)
P. lunatus (lima bean), *Phytophthora phaseoli* on, S66, S207
soybean cyst nematode on, S102
P. vulgaris
Beet curly top virus in, 972
Cucurbit leaf crumple virus in, in Georgia, S68
evaluation of germplasm for virus resistance, S99
Fusarium acuminatum and *Fusarium redolens* on, S185
Macrophomina phaseolina on, S23
Pythium spp. on, 1315, S48, S207

Uromyces appendiculatus on, S98
Xanthomonas axonopodis pv. *phaseoli* on, S185
Phellinus sulphurascens, on Douglas fir seedlings, chitinase genes from, 356
Phenol production, and potato resistance against *Alternaria solani*, 454
PHEP (Phakopsora extracellular protein), of *Phakopsora pachyrhizi*, S75
Pheromones, and *Gibberella zeae* on wheat, S43
Phialophora spp.
and *Gaeumannomyces graminis* var. *tritici*, reduction in severity of take-all disease, 404
P. gregata, on soybean, S79, S186, S188
Phillips, D., S35, S182
Phillips, D. V., S145
Phillips, N. A., S1
Phipps, P. M., S100, S153
Phoenix spp. (palms)
Marchites sorpresiva and *M. lenta* on, in Peru, S125
phytoplasma and dieback in, in Puerto Rico, S110
Texas phoenix palm decline in, *Candidatus* Phytoplasma palmae-related strain and, S175
Phoma terrestris, on onion, fungicide dip treatments for, S113
Phomopsis spp.
P. longicolla, on soybean, S26, S70, S148
P. viticola, on grape, S6
Phosphonate, for *Phytophthora ramorum* on tanoak, S115
Phosphoric acid
from fungicides and fertilizers, phytotoxicity to blueberry and grapes, S16
and *Phytophthora palmivora* on betel nut, S178
Photography, art, science and, S206
Photoreceptors, and R-protein mediated resistance to *Turnip crinkle virus*, S56
Phymatotrichopsis omnivora
on cotton, flutriafol for control of, S54
PCR detection of, S7
Physalis peruviana (cape gooseberry)
and biological control, S13
Fusarium oxysporum on, S129
Phytophthora infestans on, S7, S29
Physalospora vaccinii, on cranberry, S101
Phytoalexin, UV-C induced disease resistance in carrots and, S65
Phytophthora spp.
P. alni, on alder, 1262
ametoctradin and dimethomorph for control of, S90
aquatic habitats as reservoir for, S150
P. aquatilis and *P. aquimorbida*, from irrigation reservoirs and natural waterways in Virginia, S51
P. asparagi, on asparagus, in Michigan, S176
P. cactorum, on *Cattleya* orchid liners from Thailand, S174
CANARY biosensors for rapid detection of, S73
P. capsici
abscisic acid-mediated predisposition to disease caused by, S104
on bottle gourd, S65
Brassica spp. short-cycle cover crops for management of, S190
on cucumber, S133
on cucurbits: baseline sensitivity to fluopicolide, S201; mustard cover crop for management of, S126; sensitivity to dimethomorph, cymoxanil, and mefenoxam, S195; variability in ability of isolates to cause disease, S34
diversity of from vegetable crops in Georgia, S55
essential oils for control of, S60
genetic diversity of, S41, S47
iprovalicarb for, 1162, S74
in New York state, mefenoxam resistance and population structure, S20
on pepper, 774, S201
on squash, S142
on tomato, 619, Cover photo June
Zampro for control of, S57
chlamydospore and oospores in irrigation water, effect of temperature on survival of, S47
P. clandestina, and resistance, 551
P. cryptogea, from floriculture crops in North Carolina, phylogenetic history and genetic diversity, S94
on cucumber, effect of temperature, humidity and wounding, S43
database of, S150
detection in retail nurseries and urban forests in Nevada, S133
disease similar to root rot of, in Wisconsin, *Rps* 1k and, S186
diversity of in aquatic environments in Maryland, S119
P. drechsleri
from floriculture crops in North Carolina, S94
on pistachio in Iran, S85
ecological adaptations of, forest ecosystems and, S151
P. erythroseptica, on potato, inheritance of mefenoxam resistance and, S183
P. infestans
on cape gooseberry, S7, S29
characterization based on mating type, metalaxyl sensitivity, and mtDNA haplotype, S121
dihydroorotase dehydrogenase from, S39
on diploid potato, S87
gene regulation during asexual development, S140
gene transcription patterns in, S94
Ic clade, S68
invasion of at landscape level, 1146
models predicting outbreaks of, S92
populations in China, genetic structure of as indication of multiple migration events, 997
on potato: in Colombia, S21; as crisis, S161; genetic structure of populations in eastern North America 2002-2009, S52; intragenic technology for disease resistance, S101; *MES1* gene and systemic acquired resistance, S77; molecular and morphological population characterization, S22; molecular interactions determining broad-spectrum partial resistance, S46
on tomato: BTH-mediated resistance, cysteine protease, acidic chitinase, PR1a and, S147; as crisis, S161; genetic structure of populations in eastern North America 2002-2009, S52; polyethylene mulch, greenhouse climate and, 97; response of resistant lines to Florida genotypes of, S29
P. kernoviae
in Ireland, S17
rapid detection of, 143
P. lateralis, on Port-Orford cedar, S167
multiplex assay for genus and species-specific detection, S14
P. nicotianae
autoregulation of zoospore density-dependent behaviors, 632
from diverse hosts and geographic locations, S76
on spathiphyllum, S125
on tobacco, S97
in nurseries, greenhouses, and landscape plantings in Indiana, S69
P. palmivora, on betel nut, phosphoric acid application and, S178
P. phaseoli, on lima bean, S66, S207
P. pini, as valid and distinct species, S207
on pistachio in Iran, arbuscular vesicular mycorrhizal colonization and, S85
P. ramorum
detection in soils by baiting and dilution plating, S208
field detection of within 30 minutes, S15
genotypic diversity of in Canada, S42
in Ireland, S17
migration pathway of, S157
rapid detection of, 143
screening Gulf Coast forest species for susceptibility to, S202
susceptibility of eastern Canadian tree species to, S197
susceptibility of eastern oak species to, S136
on tanoak, S115, S167
P. sojae
microsatellite markers for diversity assessment, S123
pathotype diversity of isolates from Iowa, S190
on soybean: calmodulin gene and resistance, S107; genes conferring partial resistance, S190; genetic variation in populations from Ohio and South Dakota, S191; mapping multiple novel resistance genes against, S192; modified method to screen for partial resistance, S123; multiplexed, probe-based quantitative PCR assay for, S48; *Rps*8 gene and resistance, S189
taxonomic identification system based on microsatellites of, S29
on tomato and chrysanthemum, 871
value of morphological/phylogenetic key of exotypes and neotypes, S150
Phytoplasma
for cassava frogskin disease, S5
on juniper, S206
on Madagascar periwinkle, S127
strain differentiation using phylogenetic analysis of *secY* gene, S69
Phytopythium spp., taxonomy and nomenclature of, S150
Phytotoxins
of *Burkholderia glumae*, novel regulatory genes for, S47
thaxtomin A production, by *Streptomyces scabies*, suberin and cellobiose and, 91
Pi34 gene, and resistance against *Magnaporthe oryzae*, S63
Picea glauca, climate change and tree dieback and decline in Maine, S195
Pierce's disease. *See Xylella fastidiosa*
Pierrat, J.-C., 1262
Pierre, S. St., 80
Pierson, E. A., S159
Pierson, L. S., S159
Pieterse, C. M., S160
Pigm gene, rice blast and, broad-spectrum resistance, S49
Pik locus, in rice, and resistance against *Magnaporthe oryzae*, S96
Pilidiella granati, on pomegranate, in California, S83
Pine. *See Pinus* spp.
Pine wood nematode (PWN). *See Bursaphelenchus xylophilus*
Pineapple. *See Ananas comosus*
Pintye, A., S19
Pinus spp. (pine)
P. albicaulis (whitebark pine), forest restora-

tion and, S166
blue stain fungi associated with decline of, in Lebanon, S111
cellular mechanisms that indicate needle health in seedlings, S203
P. contorta (lodgepole pine), *Dothistroma septosporum* on, S132
detection of the fungal pathogens causing brown spot and red band needle blights of, PCR for, 105
P. monticola (western white pine), *Cronartium ribicola* on, S120
P. strobes (white pine), climate change and tree dieback and decline in Maine, S195
P. taeda (loblolly pine)
cellular mechanisms that indicate needle health in seedlings, S203
death of epithelial cells in roots, S131
Pioli, R. N., 58
Pipo gene, of *Soybean mosaic virus*, S135
Pirahesh, S., S101
Pires, J., S42
Pistacia vera (pistachio), *Phytophthora* spp. on, in Iran, S85
Pisum sativum (pea)
Fusarium avenaceum and *F. graminearum* on, S42
Fusarium avenaceum on, in North Dakota, S25
Pityophthorus juglandis (walnut twig beetle), and *Geosmithia morbida* on walnut, status in California, S48
Pivato, B., 805
Pi-z(t) gene, of *Magnaporthe oryzae*, characterization of, S202
Plamann, M., S80
Plant growth-promoting rhizobacteria (PGPR), and *Rhizoctonia solani* on rice, S170
Plasmodiophora brassicae
on *Brassica* spp., S59
on canola, S99, S194
on pak choy, S74, S117
Plasmopara viticola, on grapevine, S136, S194
Plata-Caudillo, J. A., S101
Platz, G. J., 1298
Plectosporium tabacinum, on sweet basil in U.S., S32
Ploetz, R. C., 1176, S176, S177
Ploper, L. D., 58
Plum pox virus (PPV)
eradication of in Pennsylvania, S42
macroarray for strain differentiation, S117
in plum and peach, visual symptomatology, S209
Poa spp. (bluegrass)
P. annua (annual bluegrass)
Colletotrichum cereale on, S109, S197
Xanthomonas translucens pv. *poae* on, S23
P. pratensis (Kentucky bluegrass)
Puccinia coronata on, S13
rust diseases of, S193
Podosphaera spp.
P. aphanis
cleistothecia of, initiation, development, and survival of, 246
on strawberry, S8, S194
P. clandestina, *cytb* gene in, S73
P. macularis, on hop, S40, S138
P. xanthii
assessment of sensitivity to fungicides, S16
on cantaloupe and melon, S79
on cucurbits, S40
on pumpkin, S139
on watermelon with *Cucurbita* spp. rootstock, S60
Poinsettia, *Botrytis cinerea* on, S128
Pokharel, R., S101
Polashock, J., S27, S94, S101
Polizzotto, R., 390
Pollen, and transmission of *Cucumber green mottle mosaic virus*, S72
Polyethylene mulch. *See* Mulch
Polygalacturonase
in *Monilinia fructicola*, regulation and functional characterization of, S25
from *Penicillium solitum* on Anjou pear, 42, S58
Polyketide synthase genes
Cercospora coffeicola on coffee and, S121
in *Fusarium verticillioides*, S18
Polynucleotide phosphorylase, regulation of *Dickeya dadantii* type III secretion system by, S144
Pome fruits, postharvest decays of, management of fungicide resistance and, S163
Pomegranate. *See Punica granatum*
Ponciano, G. P., S101
Ponderosa pine, foliar chlorophyll content of on black stain root rot disease sites, S94
Poojari, S., S101
Pooran DeSouza, S., S102
Popko, J. T., S92, S102, S197
Populus spp., *Septoria musiva* on, breeding for resistance, S196
Porchas, M., S79
Poromarto, S. H., S102
Porter, L., S25
Porter, L. D., S102
Post, A. R., S102
Postia placenta, effect of pH on genes involved in oxalic acid production, S21
Postnikova, O. A., S208
Potato. *See Solanum phureja*; *Solanum tuberosum*
Potato psyllid. *See Bactericera cockerelli*
Potato purple top (PPT) phytoplasma, in tomato, S135, S206, S207, S208
Potato spindle tuber viroid (PSTVd), in tomato, effects on hormone signaling and, S95
Potato virus S, in potato germplasm, from South America, S1
Potato virus Y
distribution and prevalence of strains in Iran, S87
isolate from PVYZ strain group, molecular make-up of, S61
resistance against in wild relatives of potato, S19
Potato witches'-broom (PWB) phytoplasma, in tomato, S135
Potato yellow dwarf virus (PYDV), protein localization map for, S11
Potato yellow vein virus (PYVV), in *Solanum tuberosum* and *S. phureja*, in Colombia, S176
Potnis, N., S36, S103
Potyviruses
CANARY biosensors for rapid detection of, S73
electrophoretic transformation into pepper protoplasts, S130
Poudel, B., S103, S128
Poultry litter, for control of *Sclerotium rolfsii*, S29, S103
Poverty, food security and, S156
Powell, C. A., 239, S145
Powell, G., S70
Powell, W. A., S10, S29, S89, S91
Prabavathy, V. R., S116
Prathuangwong, S., S8, S103
Prats, E., 21
Pratt, P. D., S108
Pratt, R., S103
Pratt, R. C., 72, S27, S184
Pratylenchus spp.
associated with bioenergy crops, S74
P. penetrans
on corn, S28, S184
on potato, S180
Pressure cycling technology, for extraction of *Ca.* Liberibacter spp., S114
Presting, G. G., S78
Pretorious, Z. A., S156
Preuett, J. A., S202
Prezelj, N., S81
Price, J. A., S103
Prinster, M., S108
Prior, P., 1250
Pritsch, C., S110, S118
Probability distributions, for disease severity and time-to-event data, S81
Proboscis extension reflex, of honeybee as biological sensor for *Erysiphe necator*, S124
Probst, C., S39, S103
PROCULTURE model, for septoria wheat leaf blotch on winter wheat, S32
Prodi, A., 1100
Proffer, T. J., S69
Prom, L. K., S106
PROPEP1-7 (elicitor precursor genes), of rice, defense signaling, disease resistance and, S73
Propiconazole, for *Sclerotinia homoeocarpa* on turfgrass, S102
Propulse, for cylindrocladium black rot of peanut, S100
Prosser, S. W., S104
Protein kinases, of *Fusarium graminearum*, S151
Proteomics, for markers for developing broad spectrum resistance, S164
Prothallonema asymmetricum, in Iran, S83
Prothioconazole
for cylindrocladium black rot of peanut, S100
for *Puccinia graminis* f. sp. *tritici* on wheat, S44
PRSV-W. *See Papaya ringspot virus type W*
Prunus necrotic ringspot virus (PNRSV), on rose, chemo-thermotherapy for control of, S84
Prunus replant disease, of almond, microbial community shifts associated with, S115
Prunus spp.
P. avium (sweet cherry), *Montmorency stem pitting virus* in, S130
P. dulcis (almond)
prunus replant disease of, S115
Xylella fastidiosa on, S24, S119
P. persica (nectarine)
Geotrichum candidum on, S141
Xanthomonas arboricola pv. *pruni* on, S11
P. persica (peach)
brown rot on, S195
Geotrichum candidum on, S141
Monilinia fructicola and *M. laxa* on, S119
Xanthomonas arboricola pv. *pruni* on, S11
Plum pox potyvirus in, S209
Pryor, B. M., S5
Pseudocercospora fuligena, on tomato, in Thailand, S82
Pseudomonas spp.
P. cannabina pv. *alisalensis*, in irrigation water, S79
P. chlororaphis O6, induced systemic resistance and, S158
for control of *Gaeumannomyces graminis* var. *tritici* on wheat, S141
P. fluorescens A506, for control of fire blight, 1330
inhibition of *Aspergillus flavus* by, 532
P. putida, S1Pf1Rif from, against chrysanthemum yellows phytoplasma (CYP) infection of daisy, 805
P. savastanoi, on mandevilla, genome sequence and comparative genomics of, S104
P. solanacearum, on tomato, biological control of, S34
on sorghum, effect of genotype, S37
P. syringae
on *Arabidopsis*, stomate-based defense against, S24

coronatine and, S54, S160
extracytoplasmic function (ECF) sigma (s) factors in, S12
global gene expression analysis of during epiphytic and endophytic growth, S136
PAMDB and, 208
on potato, S23
on soybean, S106, S117
Pseudoperonospora spp.
P. cubensis
on cantaloupe, S202
on cucumber, 97
on cucurbits, 1066, S43
effect of temperature and wetness duration on sporulation rate of, S89
quantitative models for germination and infection of, 959
relationship to *Pseudoperonospora humuli*, S84
P. humuli, relationship to *Pseudoperonospora cubensis*, S84
on ornamentals, Orvego for control of, S60
Pseudotsuga menziesii (Douglas fir)
Phellinus sulphurascens on, 356
resistance to rhabdocline needlecast, 337, Cover photo April
Pseudozyma flocculosa, for powdery mildews, mechanism of action, S198
PthA gene, and *Xanthomonas axonopodis* pv. *citri* on grapefruit, S71
Puccinia spp.
P. arachidis, on peanut, control of with fungicides in Nicaragua, S8
P. coronata
on *Avena barbata* in Canada, S21
on Kentucky bluegrass, S13
on oat, and resistance, QTL for, 484, 511
P. emaculata, on *Medicago truncatula*, non-host resistance mechanisms of, S129
P. graminis
on barley, S157
identification and monitoring of highly virulent race of, S156
on wheat, S44, S93
P. hemeroca, on daylily, effect of light on, S31
P. hordei, on barley, in Iraq, S4
P. kuehnii, on sugarcane, S78, S106, S173, S175
P. melanocephala, on sugarcane, effect of crop and environmental variables on, S12
new and re-emerging, in Idaho and Oregon, S113
P. pelargonii-zonalis, on geranium, S31, S116
P. polysora
on corn, real-time PCR for detection of, S27
sources of Rpp-resistance to an Rpp-virulent isolate of, S98
P. psidii
on *Eugenia koolauensis*, S128
on *Melaleuca quinquenervia*, S108
P. striiformis
Berberis spp. as alternate host for, 432, Cover photo May
races identified in U.S. in 2009, S132
on *Tritotrigia* Zhong 4, S133
on wheat, 313, S53, S132
P. triticina
forecasting of, S32
genetic differentiation within populations of, 376
Pucciniastrum spp.
on blueberry nursery plants, S99
on hydrangea, S71
Puckett, R., S83
Pueraria spp. (kudzu)
first virus infecting in U.S., S112
Phakopsora pachyrhizi on, 941
Pumpkin. *See Cucurbita* spp.
Punica granatum (pomegranate)
Botrytis cinerea on, S86
Pilidiella granati on, S83
Puppala, N., S114
Puri, K., S4
Puri, K. D., 1007, S104, S189
Purvis, M., S57, S142
Purwar, S., S104
Putnam, M. L., S104, S206
PWN. *See Bursaphelenchus xylophilus* (pine wood rot nematode)
PWT1 avirulence allele, of *Magnaporthe oryzae*, recognition by wheat and barley, 436
Pye, M. F., 871, S104
Pyraclostrobin
for *Botrytis cinerea* on apple, S63, S143
for *Cercospora sojina* on soybean, S145
for *Fusarium graminearum*, S147
for *Penicillium expansum* on apple, S63
Pyrenophora spp.
P. teres
on barley, 80, S68
MAT loci for differentiation of, 1298
P. tritici-repentis, on wheat
genetic diversity of mating type and toxin production genes, 474
host-selective toxins and, S160
QTL for resistance against, 460
resistance against, S45
Pyricularia oryzae, on rice, in Arkansas, genotypic and phenotypic diversity of, S145
Pyrimethanil, against *Penicillium* spp.
natural resistance frequencies, 738
reduced sensitivity to, S2
Pyrus spp. (pear)
Alternaria alternata on, reactive oxygen species generation and penetration of appresoria, 840
P. communis (Anjou pear), *Penicillium* spp. on, 42, S58
P. pyrifolia (Japanese pear), *Alternaria alternata* on, 840
Pythiogeton spp., taxonomy and nomenclature of, S150
Pythium spp.
P. abappressorium, S134
P. aphanidermatum, S36, S48
on corn, in Ohio, S33
on cotton, S153
diversity assessment in forest nurseries, S153
DNA barcode, genomics, and phylogenetics of, S153
ecology and biology of, S152
P. irregulare
population genetics and inter-species boundaries, S154
on soybean, S33
range of aggressiveness of species associated with plants, S153
sampling and sample processing, S153
sensitive molecular detection of, S7
on snap bean, S207
on soybean, S33, S111, S184
taxonomy and nomenclature of, S150
on tomato, S73
P. ultimum
after nutrient impulse in soils, 593
on bean, 1315
on corn, S28
metalaxyl for, S102
transmission of in fungus gnats, 1307
Trichoderma harzianum for control of, 1213
PZSV. *See Pelargonium zonate spot virus*

Qi, M., S104
Qin, H., S105
Qiu, J., S105
Qiu, W., S38
Qu, B., 183
Qu, F., S105
Quarantine, and pest risk analysis, role of in food security, S156
Quello, K. L., S183, S189
Quercus spp. (oaks)
Ceratocystis fagacearum on, 979
Phytophthora ramorum on, S15, S136, S167
Raffaelea quercivora on, 747
Quesada-Ocampo, L. M., 619
Quito, D., S106
Quorum quenching, and *Burkholderia glumae* on rice, S96
Quorum sensing, *Acidovorax avenae* and, S148

R genes, *Pseudomonas syringae* on soybean and, S106
Rabenoelina, F., 424
Radwan, G. L., S106
Radwan, O., S106
Raffaelea spp.
R. lauricola
on avocado, S176
and redbay ambrosia beetle, 1118
on redbay and other species, S177
R. quercivora, on *Quercus* spp., 747
Rahman, A., S106
Rahman, M., S21, S106
Rahman, M. H., S130
Raid, R. N., S36, S78, S106, S107, S175, S196
Raikhy, G., S107
Rajashekara, G., S13, S140
Rakhshandehroo, F., S4, S31, S84, S87
Ralstonia solanacearum
CANARY biosensors for rapid detection of, S73
on ginger, screening for biological control agents for, S141
PAMDB and, 208
on potato, phenotypic diversity of strains, 1250
race 3 biovar 2
DNA-based diagnostics for detection of, S66
education and outreach program for best management of, S22
effective international education program for management of, S173
novel detection using magnetic capture hybridization and real-time PCR, S45
temperature fluctuations and viability reduction, S115
on tobacco, S14, S100
on tomato, S15, S55, S88, S109
type III secretion system of, S55
Ramadugu, C., S46, S77, S107
Raman spectroscopy, for identification of *Xanthomonas* spp., S96
Rambutan. *See Nephelium lappaceum*
Ramirez, A. L., S110
Ramírez, C., S170, S171
Ramírez, M., S171
Ramos, A. T., S21
Randoux, B., 1352
Rao, S., S107
Raper, R. L., S16
Rapeseed. *See Brassica napus*
Rapid Cycling Brassica Collection (RCBC), *Plasmodiophora brassicae* on, S59
Rappaport, K., S73
Rascon, A., S62
Rascon, A. A., S107
Rasmussen, J., S151
Rasmussen, J. B., S185
Raspberry latent virus, and new genus of dicot infecting reoviruses, S106
Rathburn, H. B., S88
Ratoon stunting disease, of sugarcane, S21

Rauscher, G., S107, S108
Rav David, D., 225, S33
Ravanlou, A., S108
Ravnikar, M., S81
Rayamajhi, M. B., S108
Rayapati, N. A., S90
RcsC sensor kinase, of *Erwinia amylovora*, comparative analysis vs. other enterobacteria, S133
Reactive oxygen species
Alternaria alternata in Japanese pear and, 840
Botyrtis cinerea and, S151
coronatine from *Pseudomonas syringae* pv. *tomato* and, S54
FvNoxR gene of *Fusarium verticillioides* and, S44
Mycosphaerella graminicola pathogenicity and, S25
opine wood nematode and, 1289
Sclerotinia sclerotiorum, S58
Trichoderma harzianum seed treatment and, 1213
Rebello, G., S108
Rebollar-Alviter, A., S6
Recknor, J., S58
Records, A. R., S136
Red flour beetles. *See Tribolium castaneum*
Redbay. *See Persea borbonia*
Redbay ambrosia beetle. *See Xyleborus glabratus*
Redbud yellow ringspot-associated virus (RYRSaV), S67, S201
Reddy, M., S65, S146
Reddy, M. S., S170
Redinbaugh, M., S105
Redinbaugh, M. G., 1138, S27, S184
Reed, A., 493
Reed, S., S71
Reese, B. N., S108, S138
Reeves, P. A., S164
Rehman, M., S172
Reignault, P., 1352
Reiners, S., S20
Remote sensing applications for plant pathology using latex weather balloons, S188
Rémus-Borel, W., S196
Ren, H., 573
Renard, M.-E., 474
Renard-Merlier, D., 1352
Replicase proteins, of *Grapevine rupestris stem pitting-associated virus*, S104
Replogle, A., S108
Repshare, J. M., S115, S116
Rer (resistance to rust) mutants, *Phakopsora pachyrhizi* on *Medicago trunculata* and, S54
Resistance
against *Alternaria solani*, of potato, biochemical evaluation of, 454
of *Alternaria* spp., against fungicides, S14, S55, S130
of annual bluegrass, against *Xanthomonas translucens* pv. *poae*, systemic acquired resistance and, S23
against *Aspergillus flavus*, of corn, S4, S37
of barley
against *Blumeria graminis* f. sp. *hordei*, S158
against *Cochliobolus sativus*, S110
against *Puccinia graminis* f. sp. *tritici*, S157
against septoria speckled leaf blotch and net form net blotch, 80
of bean
evaluation of germplasm for virus resistance, S99
against *Pythium ultimum*, 1315
against *Sclerotinia sclerotiorum*, S122
against *Uromyces appendiculatus*, S98
against *Beet necrotic yellow vein virus*
and host effect on genetic diversification of single-plant populations, 1204
of sugar beet, 127, S2, S120
viral evolution for overcoming, S149
against benzimidazole, of *Botyrtis cinerea*, S62
against *Bipolaris oryzae*, of rice, mapping genes for resistance to, S11
of blueberry, against *Colletotrichum* spp., screening for resistant lines, S83
against *Blumeria graminis* f. sp. *hordei*, of barley, molecular basis of broad-spectrum resistance, S158
against boscalid, of *Didymella bryoniae*, S201
against *Botrytis cinerea*, and IVR gene, 225, *400*
of *Botrytis cinerea*
against benzimidazole, S62
against fungicides, S63, S134, S143
of *Brassica* spp., against *Leptosphaeria maculans*, screening for resistant lines, S77
broad-spectrum
against oomycetes and fungi, conserved effectors and effector motifs for, S158
against *Phytophthora infestans* on potato, S46
using oligoadenylate system, S38
of canola, recombinant antibody-mediated multiple disease tolerance, S130
against carboxylic acid amide fungicides, of *Peronophythora litchii*, 522
against *Cercospora arachidicola*, of peanut, S200
of *Cercospora arachidicola*, against fungicides, S105
against *Cercospora sojina*, of soybean, S28
of chestnut, against *Cryphonectria parasitica*, S10
against *Cochliobolus* spp.
of barley, S110
of maize, S114
against *Colletotrichum* spp., of blueberry, rapid screening for resistant lines, S83
against copper, of *Xanthomonas citri* subsp. *citri*, S13, S172
of corn
against *Aspergillus* spp., S4, S37
against *Cochliobolus heterostrophus*, S114
against foliar diseases, mapping quantitative trait loci for, 72
against *Maize streak virus*, S113
against *Stenocarpella maydis*, S88
against *Cronartium ribicola*, of *Pinus monticola*, S120
against *Cryphonectria parasitica*, of chestnut, S10
against *Cucumber mosaic virus*, of *Gladiolus* spp., S59
of cucurbits (wild), against *Meloidogyne incognita*, S35
cuticle in basal and induced defense against bacterial and fungal pathogens, S139
of *Didymella bryoniae*
against boscalid, S201
against fungicides, S9, S126
against dodine, of *Venturia inaequalis* on apple, S27
of Douglas fir variety Shuswap, to rhabdocline needlecase, 337
against *Elsinoë fawcetti*, of grapefruit, S86
of *Erysiphe necator*, against fungicides, S9
evaluation of world collections of wheat for, S65
against fludioxonil and pyrimethanil, of *Penicillium digitatum*, natural frequencies of, 738
against fungicides
of *Alternaria* spp., S14, S55, S130
of *Botrytis cinerea*, S63, S134, S143
of *Cercospora arachidicola*, S105
of *Didymella bryoniae*, S9, S126
of *Erysiphe necator*, S9
of *Fusarium graminearum*, S147
model to predict selection for resistance, S51
mutations in succinate-dehydrogenase inhibitor target protein and, S37
of *Penicillium expansum*, S163
of *Phytophthora* spp., S74, S147, S183
of *Podosphaera* spp., S73, S139
postharvest, mechanisms of, S162, S163
and postharvest decays of pome fruits, S163
of *Pythium ultimum*, S102
ShCYP51 gene of *Sclerotinia homoeocarpa* and, S75
of *Venturia inaequalis*, S23, S69, S100, S189
of *Fusarium graminearum*, against fungicides, S147
against *Fusarium* spp.
F. graminearum: of soybean, S33; of wheat, S50, S104, S186
F. oxysporum, of watermelon, S99
F. solani, of pea, S45
of sorghum, alteration of lignin biosynthesis and, 671
of *Gladiolus* spp., against *Cucumber mosaic virus*, S59
of grapefruit, against *Elsinoë fawcetti*, S86
H gene and resistance to Hessian fly, 279
against Hessian fly, *H* gene and, 279
against *Heterodera glycines*, of soybean, *rhg1* locus and, S26
of hop, against *Podosphaera macularis*, S138
of hydrangea, against *Pucciniastrum hydrangeae*, S71
against iprovalicarb, of *Phytophthora capsici*, 1162
of kudzu against *Phakopsora pachyrhizi*, 941
against *Leptosphaeria maculans*, of *Brassica* spp., S77
against *Magnaporthe oryzae*
Pi34 gene and, S63
Pigm gene and, S49
Pik locus and, S96
QTL in *Japonica* rice landrace responsible for, 822
against *Maize streak virus*, of maize, S113
against mefenoxam, of *Phytophthora capsici* in New York state, S20
against *Meloidogyne incognita*, of wild cucurbits, S35
and modification of maize chitinase of by *Stenocarpella maydis*, 645
of *Monilinia* spp., against fungicides, S50
against *Mycosphaerella fijiensis* m., on banana and plantain, S5
pattern recognition receptors in plant innate immunity, S157
of pea against *Fusarium solani* f. sp. *phaseoli*, S45
of peanut
against *Cercospora arachidicola*, S200
against *Tomato spotted wilt virus*, S105
of *Penicillium* spp.
against fludioxonil and pyrimethanil, natural frequencies of, 738
against fungicides, S163
of *Peronophythora litchii*, against carboxylic acid amide fungicides, 522
against *Phakopsora pachyrhizi*
of kudzu, 941
of soybean, S61, S96, S129
against *Phomopsis longicolla*, of soybean, S70
against *Phytophthora* spp.
P. capsici: compost water extracts for, 774; of tomato, in domestic and wild relatives, 619, Cover photo June
P. clandestina, of subterranean clover, 551

P. infestans: broad-spectrum partial, S46; effects of spatial scale and weather, 1146; of potato, S46, S77, S87, S101; of tomato, S29
P. sojae, of soybean: calmodulin gene and, S107; mapping multiple novel resistance genes against, S192; modified method to screen for partial resistance, S123; *Rps*8 gene and, S189
of *Phytophthora* spp. against fungicides
P. capsici, 1162, S20, S74
P. erythroseptica, S183
P. infestans, S147
of *Pinus monticola*, against *Cronartium ribicola*, S120
of plantain and banana, against *Mycosphaerella fijiensis* m. on, S5
against *Podosphaera* spp.
P. aphanis, of strawberry, S8
P. macularis, of hop, S138
of *Podosphaera* spp. against fungicides
P. clandestina, S73
P. xanthii, S139
of *Populus* spp., against *Septoria musiva*, S196
of potato
against *Alternaria solani*, biochemical evaluation of, 454
against *Phytophthora infestans*, S46, S77, S87, S101
against *potato virus Y* in wild relatives of potato, S19
proteomics for identification of markers for, S164
against *Pseudomonas syringae*, of soybean, RPG1-B and, S117
against *Puccinia* spp.
P. coronata: broad-spectrum resistance sources, S21; of wheat, QTL in Ogle/TAM O-301 mapping population, 484
P. emaculata, of soybean, S129
P. graminis f. sp. *tritici*, of barley, S157
P. polysora, *Rpp* genes and, S98
against *Pucciniastrum hydrangeae*, of hydrangea, S71
against *Pyrenophora tritici-repentis*, of wheat, 460, S45
against pyrimethanil and fludioxonil, of *Penicillium expansum*, S2
against *Pythium* spp.
of bean, mapping QTL for, 1315
of soybean, S184
of *Pythium ultimum*, against metalaxyl, S102
against QoI fungicides, of *Alternaria solani*, S55
QTL for genes that contribute to, S157, S164
of rapeseed, against *Sclerotinia sclerotiorum*, S18
against rhabdocline needlecase, 337
against *Rhizoctonia solani*
of rice, S136, S146
of St. Augustine grass, S36
of *Rhynchosporium secalis* on barley, against triazole, S49
of rice
against *Bipolaris oryzae*, S11
against *Magnaporthe oryzae*, S49, S74, S96
against *Rhizoctonia solani*, S136, S146
against rice bacterial blight, D-allose and, 85
saccharine and induction of systemic acquired in soybean, S122
of *Sclerotinia homoeocarpa*, against fungicides, S75
against *Sclerotinia sclerotiorum*
of bean, S122
of rapeseed, S18
against *Septoria musiva*, of *Populus* spp., breeding for, S196
against septoria speckled leaf blotch and net form net blotch, of barley, 80
of sorghum, against *Fusarium* spp., 671
of soybean
against *Cercospora sojina*, S28
against *Fusarium graminearum* and *Pythium irregulare*, S33
against *Phakopsora pachyrhizi*, S61, S96, S129
against *Phomopsis longicolla*, S70
against *Phytophthora sojae*, S107, S123, S189, S192
against *Pseudomonas syringae*, S117
against *Pythium* spp., S184
saccharine and induction of systemic acquired, S122
against soybean cyst nematodes, S26, S58, S190
against soybean cyst nematodes, of soybean, S26, S58, S190
of St. Augustine grass, against *Rhizoctonia solani*, S36
against *Stenocarpella maydis*, *chiA* genes as marker for, S88
of strawberry, against *Podosphaera aphanis*, S8
against stripe rust, of wheat, 313
of subterranean clover, against *Phytophthora clandestina*, 551
of sugar beet, against *Beet necrotic yellow vein virus*, 127, S2, S120
systemic, and biochar, 913
against tebuconazole, of *Cercospora arachidicola* on peanut, S105
of tomato
against *Phytophthora capsici*, 619, Cover photo June
against *Phytophthora infestans*, S29
against *Tomato chlorosis virus*, 582
against *Tomato chlorosis virus*, of tomato, 582
against *Tomato spotted wilt virus*, of peanut, S105
against triazole, of *Rhynchosporium secalis* on barley, S49
in turfgrass against diseases, fifty years of breeding for, S193
to *Turnip crinkle virus*, HRT protein and photoreceptors, S56
against *Uromyces appendiculatus*, of bean, S98
UV-C induced disease resistance in carrots, S65
of *Venturia inaequalis*, against fungicides, S23, S27, S69, S189
of watermelon, against *Fusarium oxysporum* f. sp. *niveum*, S99
of wheat
against *Fusarium graminearum*, S50, S104, S186
pathogen hijacking of mechanisms, S151
against *Puccinia coronata*, 484
against *Pyrenophora tritici-repentis*, 460, S45
against stripe rust, 313
against *Xanthomonas campestris*, S59
against *Xanthomonas translucens*, S3
against *Xanthomonas anxonopodis*, of calamondin and kumquat, S24
against *Xanthomonas campestris*, of wheat, S59
against *Xanthomonas citri* subsp. *citri*, S37, S42
of *Xanthomonas citri* subsp. *citri*, against copper, S13, S172
against *Xanthomonas translucens*, S3, S23
Restom Gaskill, D. A., S175
Restrepo, S., S7, S8, S19, S21, S22, S29, S39, S86, S127, S129
Restriction-associated DNA (RAD) tags, for *Colletotrichum* spp., S27
Revus, for *Bremia lactucae* on lettuce, S66
Reyes Gaige, A., S118
Reynaldi, S., S40
Reynolds, K., S74
Reynoutria sachalinensis, Regalia from, for control of cucumber powdery mildew and lettuce downy mildew, S123
Rezaee, S., S13, S83, S101
Rezende, J. A., S87
Rezzonico, F., S120
RFP (red fluorescent proteins), in *Ophiosphaerella herpotricha* on bermudagrass, 415
Rhabdocline oblonga and *R. oblonga*, on Douglas fir variety Shuswap, 337, Cover photo April
Rhg genes, and resistance against soybean cyst nematodes, S26, S58
Rhizoctonia spp.
biology and management of similar diseases in turfgrass, S152
on cereal crops, S85
R. fragariae, on strawberry, S195
isolation of from soil, evaluation of selective media and chemicals for, S121
on lettuce, S13
R. oryzae, on bermudagrass, S152
R. oryzae-sativae, on rice, 493
R. solani
anastomosis group 3, S32
Bacillus subtilis MBI 600 for control of, S65
on canola, S89
ITS-RFLP for identification of, S113
on maize, S4
on miscanthus, S17
on rice: in Arkansas, multilocus analysis, S22; ethylene and abscisic acid in mediating resistance against, S146; *OsPROPEP1-7* (elicitor precursor genes) and, S73; phenotyping the components of resistance, S136; plant growth-promoting rhizobacteria and, S170; screening for bacterial antagonists, S146; suppression of by cow urine, S56
on rice and maize, divergence among populations infecting, 172
on St. Augustine grass, screening for resistance, S36
on sugar beet: AG 2-2 isolate, aggressiveness of, S16; Azoxystrobin for, S102; cultivar selection for resistance, S123; in Michigan, S47; in Nebraska, azoxystrobin for management of, S48; temperature, moisture, and fungicide effects in managing, 689, Cover photo July
on tall fescue, S80, S205
on tomato, 493
on wheat, S142
on zoysiagrass, S91, S203
on tall fescue, S28, S80, S205
on turfgrass in Maryland and Virginia, S6
R. zeae, on bermudagrass, S152
Rhizopus stolonifer, on tomato, S33
Rhododendron spp., *Phytophthora* spp. on, in Ireland, S17
Rhynchosporium secalis, on barley, S49
Ribes missouriense, *Cronartium ribicola* on, 986
Rice. *See Oryza sativa*
Rice, J. T., 404
Rice, K. A., S88
Rice blast. *See Magnaporthe oryzae*
Richard, J., S108
Richardson, K., S108
Richardson, P., S51, S207
Richwine, N., S42
Ridenour, J. B., S109
Rideout, S. L., S48, S207

Ridout, C. J., S157
Riegel, D. G., S136
Riley, D. G., S122
Riley, R. T., S147
Riley, T., S172
Rinehart, T., S71
Rinehart, T. A., S45
Rines, H. W., 511
Rintoul, T. L., S153
Rioux, D., S197
Rioux, S., S193
Risede, J., S58
Risk assessment, role of in food security, S156
Ristaino, J. B., 997, S52, S68, S161
Ritenour, M. A., S12
Ritson, R., S182
Rivard, C., S73
Rivard, C. L., S109
Rivera, L. I., S176
Rivera, M. C., S21
Rivera-Varas, V. V., 290
Rizzo, D., S167
Rizzo, D. M., 871
Roane, C. W., S206
Robbins, R. T., S114
Roberts, J. A., S109, S197
Roberts, M., S162
Roberts, P., S52
Roberts, P. C., 21
Roberts, P. D., S52, S175
Robertson, A., S183
Robertson, A. E., 931, S14, S109, S123, S182, S190
Robertson, C. L., S134, S203
Robertson, J., S59
Robertson, N. L., S109
Robideau, G. P., S150, S153
Roca, M., S99
Roca, M. M., S176
Rocateli, A. C., S16
Rockhold, D. R., S101
Rodrigues, J. V., S110
Rodriguez, S., S110, S118
Rodríguez-Alvarado, G., 1176
Rodriguez-Burgos, P., S176
Rodriguez-R, L. M., S8
Rodriguez-Salamanca, L., S176
Roenhorst, A., S81
Rogers, C. A., S208
Rogers, E. E., S68, S110
Rogers, S., S110
Rogers, S. L., S12, S35
Rohfritsch, O., 279
Roig, J., S41
Rojas, P. F., S110
Rojas-Bertini, C., S110
Roldán, A., 682
Rollins, J., S151
Rollins, J. A., S201
Roman, F., S34
Romer, P., S36
Rommens, C. M., S101
Rong, X., S159
Roose, M., S107
Root-knot nematodes. *See Meloidogyne incognita*
Roper, C. M., S85
Rosa spp.
  Arabis mosaic virus and *Prunus necrotic ringspot virus* in, S84
  Botrytis cinerea on, S62
  Xanthomonas sp. on, S129, S177
Rosales Villavicencio, I., S99, S110
Rose rosette-associated virus (RRaV), S67
Rosellinia necatrix, mycoviruses from, 922
Rosenberger, D. A., 345, S197
Ross, D., S51
Ross, R. E., S18, S205
Ross, S., S208
Rossard, S., 1352
Rossi, L., S166
Rossi, V., 1321, S19, S194
Rossing, W. A. H., 1146
Rosskopf, E., S176
Rosskopf, E. N., S19
Rostagno, L., 1100
Rothrock, C., S31, S75, S111, S129
Rothrock, C. S., S121, S153, S203
Rothwell, N. L., S9
Rott, P. C., S111
Rotylenchulus reniformis
  on cotton, nematicides for management of, S86
  detection by conventional and real-time PCR, S114
Roubtsova, T. V., 871, S104
Rough lemon. *See Citrus jambhiri*
Rouse, D. I., 986
Rouxel, T., S158
Rowhani, A., 830, S3, S5
Roy, A., 1077, S111
Roy-Chowdhury, M., S202
Royer, M., S111
Rpf genes
  and *Xanthomonas axonopodis* pv. *glycines* on soybean, S103
  and *Xanthomonas oryzae* pv. *oryzae* virulence, S25
RPG1-B, and *Pseudomonas syringae* on soybean, S117
*rpo*N and, and *Brenneria rubrifaciens* on walnut, S80
Rpp genes
  Phakopsora pachyrhizi on soybean, S61, S96
  resistance against *Puccinia polysora* and, S98
Rps genes
  and *Phytophthora sojae* on soybean, S189
  and *Phytophthora*-like root rot, S186
RT-PCR. *See* PCR methods
Ruaro, L., S111
Rubus occidentalis (black raspberry). *Black raspberry necrosis virus* in, S56
Rudolph, K., S111
Rugh, A. L., S197
Ruhl, G., S69
Ruhl, G. E., S168
Ruhl, G. S., S32
Rumohra adiantiformis (leatherleaf fern), fern distortion syndrome on, S63, S170
Rupe, J., S26, S31, S111, S129
Rupe, J. C., S70, S203
Rush, C., S50, S68
Rush, C. M., 127, 1204, S2, S103, S120, S138, S149, S203
Russell, P., S15
Russell, S. A., S136
Russell, T., S131
Russo, J., S46, S179
Russo, V. M., 33
Ryegrass, perennial. *See Lolium perenne*
Ryegrass bunt, and *Tilletia* spp., 645
Rynchosia minima, bean-infecting begomovirus from, S172
Ryu, C., S54, S160
Rz2 gene, and *Beet necrotic yellow vein virus* in sugar beet, S120

S1Pf1Rif, from *Pseudomonas putida*, 805
Saad, A. T., S111
Saalau Rojas, E., S26, S112, S189
Sabanadzovic, S., S2, S103, S112, S123
Saberi-Riseh, R., S84
Saborío, F., S63
Saccharin, and induction of systemic acquired resistance in soybean, S122
Saccharum spp. (sugarcane)
  Leifsonia xyli subsp. *xyli* on, S21
  Puccinia kuehnii on, S78, S106, S173, S175
  Puccinia melanocephala on, S12
  Sugarcane streak mosaic virus in, S140
  Sugarcane yellow leaf virus in, S43
  Xanthomonas albilineans on, S39, S78
Safety
  and biotechnology regulation, S176
  food security and, S156
  fresh produce and, S155
  human pathogens on plants and, S168
  Salmonella outbreaks associated with vegetables and, S177
Saffarian Abbas Zadeh, M., S113
Saha, S., S72
Sahebani, N., 454
Sainju, U. M., S68
St. Augustine grass. *See Stenotaphrum secundatum*
Sakthikumar, S., S156
Salama, N., 814
Salas, G., 58
Salaudeen, M. T., S113
Salazar, J. J., S4
Salgado, J. D., S113
Salicylate hydroxylase, of *Candidatus* Liberibacter asiaticus, S127
Salicylic acid
  Cucumber mosaic virus 2b RNA silencing suppressor and, S70
  Fusarium oxysporum on melon and production of, 682
  plant immunity and, S160
  and potato purple top (PPT) phytoplasma in tomato, S208
Salih, M. M., S4
Salinas Valley, food safety research in, S155
Saliva, as vector for *Xylella fastidiosa* inoculation, S9
Salmonella enterica
  outbreaks of, vegetables and, S177
  STM0978 and *STM0693* genes of, S47
Salsola tragus (tumbleweed)
  Colletotrichum gloeosporioides f. sp. *salsolae* for, S205
  searching for fungi as possible biological control agents of, S64
Salt stress, and *Phytophthora* spp. on tomato and chrysanthemum, 871
Sampangi, R., S113
Sanchez, K., S113
Sanchez, K. R., S27
Sanders, Jr., F., S113
Sanderson, J. P., 1307
Sanderson, K. R., S100
Sanderson, P. G., S163
Sanderson, R., 21
Sandoval, C., S110
Sang, M. K., 774
Sangchote, S., S121
SanMiguel, P. J., S17
Sano, T., S95
Sanogo, S., S114
Sanssené, J., 1352
Santa-Cruz, J., S114
Santhanam, P., S64
Santos, M., S39, S95
Santos, V. C., S77
Saponari, M., 319
SARRITOR, commercialization of, S162
Sarver, B. A. J., 58
Sasaki, A., 922
Sastoque, L., S42
Satoh, M., 85
Sattler, S. E., S37, S185
Saurat, C., 105
Savary, S., S136, S156
Saville, B. J., S87
Sayler, R. J., S114
SBFS. *See* Sooty blotch and flyspeck: Sooty blotch and flyspeck (SBFS) complex
Scab, on potato, fish emulsion for suppression of, S1

Scandiani, M. M., 58
Schaad, N., S114, S116, S207
Schaad, N. W., 208
Schaafsma, A. W., S180
Schell, M. A., S45, S66
Schena, L., S76
Scherf, J. M., S115
Scherm, H., S55, S81
Schilder, A. M. C., S9, S83
Schlehuber, S., S37
Schlub, K. A., S115
Schlub, R. L., S82, S115
Schmale, D. G., S208
Schmidt, D., S115
Schmidt, F. J., 1111, S43
Schmidt, L. S., S115
Schneider, B., 863
Schneider, K. L., S78
Schneider, R. W., S22, S115, S134, S203
Schneider, W., S117
Schneider, W. L., S126, S149, S209
Schoelz, J. E., 1111
Scholar, for *Penicillium expansum* on pome fruit, S163
Scholez, J. E., S43
Scholthof, H. B., S76
Scholthof, K.-B. G., 14
Schreiber, H. L., S115, S116
Schroeder, B. K., S31, S53
Schroeder, K. L., S142
Schubert, T., S116, S172
Schuenzel, E., S116
Schuenzel, E. L., 208
Schultheiss, H., S54, S129
Schultz, P. B., S205
Schumacher, R., S114
Schwab, E. B., S16
Schwandt, J., S166
Schwartz, D., S75
Schwarz, P. B., 290
Schweri, K. K., S116
Sciumbato, G. L., S153
Sclerotinia spp.
  S. homoeocarpa (dollar spot)
    demethylation inhibitor fungicides for, S75, S197
    early-season fungicide programs for control of, S137
    effect of temperature on growth of, S137
    genetic diversity of, in Florida, S201
    propiconazole for control of, S102
    resistant to fungicides and plant growth regulators, S92
    weather variables for prediction of, S120
  S. minor
    on lettuce, S91
    on peanut, S204
  S. sclerotiorum
    on bean, S122
    on canola, S184
    on carrots, S65, S100
    Coniothyrium minitans for control of, S5
    on Dahlia, S5
    effect of sclerotial moisture content on carpogenic germination of, S189
    from four crops, genetic variation of, S4
    on lettuce, S24, S91
    oxalic acid and redox changes in host cellular environment, S58, S151, S160
    population study on Western Australian strains of, S39
    predictive model for carpogenic germination of, S89
    on rape, S18, S23
Sclerotium cepivorum, on garlic, in Maine, S194
Sclerotium rolfsii
  characterization of isolates affecting vegetable and row crops in southern U.S., S140
  on peanut, S40, S199
  on *Phalaenopsis* orchids, S22
  poultry litter for control of, S103
Scocco, E. A., S116
Scorza, R., S209
Scott, R., S136
Scully, B., S37, S57
Sechler, A., S114, S116, S207
Secor, G. A., 290
Security. *See* Food security
SecY gene, differentiation of phytoplasma genes based on phylogenetic analysis of, S69
Seebold, K. W., S153
Seed industry, crop biosecurity and, S155, S181
Seeland, T. M., 33
Seem, R. C., 246, 1240, S8, S38, S88
Seemüller, E., 863
Sekar, J., S116
Selote, D., S117
Semenov, A. M., 593
Semer, C. R., S40
Sengodagounder, V., S88
Seo, Y.-S., 1089
Sep-lveda, P., S99, S110
Septoria spp.
  S. musiva, on *Populus* spp., breeding for resistance, S196
  S. passerinii, on barley, resistance loci for, 80
  predicting activity of experimental fungicides for using multiple regression modeling, on wheat, S63
  S. tritici, on wheat, S36, S51
Sequence-based identification
  of fungi and oomycetes, promise and pitfalls of, 732
  viruses and, S154
Serdani, M., S104
Serine proteases, *Clavibacter michiganensis* on tomato and, 252
Serratia marcescens, for control of root-knot nematode on tomato in Egypt, S1
Serrato, L. M., S176
Sessa, G., 252, S22
Sétamou, M., S66
Sether, D. M., S82
Setubal, J. C., 208
Severinia buxifolia, *Candidatus* Liberibacter asiaticus on, S107
Severity of disease. *See* Disease severity
Sexton, P. J., S194
Shabana, Y., S176
Shah, K. H., S117
Shah, S., S130
Shahbazi, H., 454
Shamsbakhsh, M., S31
Shan, W., S158
Shao, J., S29, S95
Sharma, K., S117
Sharma, S. K., S96
Shatters, R. G., S6
Shaw, B. D., S62, S133
Shaw, J. N., S86
Shaw, M. W., S49
Shennan, C., S19
Sherman, D., S117
Sherman, D. J., S209
Shi, X., 822, S118
Shim, W., S62, S76, S94, S109, S133
Shimabuku, R., S82
Shinogi, T., 840
Shinya, R., 1289
Shirai, M., 436
Shiraishi, A., S118
Shishkoff, N., S136
Shock, C., S113
Shoemaker, R., S189
Shokes, F. M., S153
Shrestha, B., S47
Shtienberg, D., 97
Shu, X., S38
Shuai, B., S118
Shyu, C., S11
Sick Plants and a Hungry World, online course for master gardeners, S33
Sieburth, P. J., 319
Sierotzki, H., S49, S162
Signaling, activation of secondary metabolites with multiple roles in biological control, S159
Sikora, E., S30
Sikora, E. J., S118
Silber, A., 913
Silicon
  for *Colletotrichum orbiculare* on cucumber, S174
  for *Cylindrocladium spathiphylli* and *Mycosphaerella fijiensis* on banana, S58
  for *Fusarium oxysporum* on tomato, S52
  for *Fusarium* spp. on cucurbits, S18, S205
  for powdery mildew on zinnia, S74
  for *Ralstonia solanacearum* on tomato, S88
  for *Tobacco ringspot virus*, S144
  transporters of in wheat, S196
  for *Xanthomonas perforans* on tomato, S178
Silva, P., S110, S118
Silva, V., S187
Silva Junior, G. J., S118, S119
Silva-Rojas, H., S6
Silva-Rojas, H. V., S119
Silveira Baggio, J., S119
Silver, oxidized, as safe, effective seed treatment, S48
Simard, M., S197
SIMBLIGHT1 and SIMPHYT1 models, for *Phytophthora infestans* outbreaks, S92
Simmons, A., S103
Simon, A., S105
Simon, J., S198
Simon, L., S121
Simonson, A., S59
Simplicillium lanosoniveum, for control of *Phakopsora pachyrhizi* on soybean, S134
Simpson, C. E., S204
Singer, S., S50
Singh, A., S119
Singh, D., S93
Singh, R., S85
Single nucleotide polymorphisms (SNPs)
  for genetic diversity of *Phytophthora capsici*, S47
  for relationships among *Wheat streak mosaic virus* isolates, S110
  in *Sirococcus clavigignenti-juglandacearum*, S17
  in *Wheat streak mosaic virus*, S18
Sink, S., 58
Sinn, J. P., 539
Sirococcus clavigignenti-juglandacearum, reclassification of into genus *Ophiognomonia*, S17
Sistani, K., S30
Sisterson, M., S119
Sivasithamparam, K., 551, S35, S39, S60
Skaltsas, D., S119
Skaria, M., S66
Skatenok, O. O., S64
Skelsey, P., 1146, S120
Skelton, L. L., S155
Skipper, C. E., S115, S116
SkyBit, agreement between apple scab and fire blight forecasts of, S46
SLB. *See* Southern leaf blight
Sliva, D., S131
SM3, from *Trichoderma virens*, biological control and, S27
Smart, C. D., S20
Smart phone technology, turfgrass disease identification and management using, S78
Smeda, J., S108
Smiley, R. W., 216
Smith, A. G., S70

Smith, A. J., S120
Smith, B. J., S83, S134
Smith, C. A., S196
Smith, D., S137
Smith, D. L., S98, S120
Smith, D. S., S69
Smith, J., 848, S16
Smith, J. A., S82, S174, S176, S177
Smith, J. E., S120
Smith, J. T., 127
Smith, K. P., 80
Smith, L., S44
Smith, M. J., S120
Smith, R. J., S3
Smith, T. R., S175
Smither, M. R., S1
Smits, T. H., S54, S59, S120
Smooth cordgrass, S195
Snails. *See Helix aspersa* (brown garden snail)
Snap bean. *See Phaseolus vulgaris*
Snelling, J., S157
snf1 gene, of *Ustilago maydis*, as dual regulator of cell wall degrading enzymes, 1364
Sniezko, R. A., S120, S167
Snook, M., S10
Socha, C., S19
Soil
  anaerobic soil disinfestation, S19
  Aspergillus flavus in, S124
  biodisinfection of, S39
  electrical conductivity for management of *Rotylenchulus reniformis* in, S86
  Fusarium spp. in, S73, S80
  microbial aspects of accelerated degradation of metam sodium in, 367
  microbial communities of, S41
  Pythium spp. in, 593, S73
  Rhizoctonia spp. from, S121
  steaming of, S18
  and *Verticillium dahliae* on strawberry, S193
  Xanthomonas citri subsp. *citri* in, S42
  Yigo Experiment Station, S82
Soil phytophathometry, for detection of *Fusarium oxysporum* on tomato, S29
SoilGard 12G, for nematodes and soil borne diseases in fruiting vegetables, S50, S200
Sokhandan, N., S87
Sokhandan Bashir, N., S121
Solano, F., S62
Solanum spp.
  S. lycopersicum (tomato)
    14-3-3 protein of, S92
    Alternaria solani on, in North Carolina, S55
    arbuscular mycorrhizal fungi on, S173
    biofungicides for disease control on, S196
    Botrytis cinerea on, 225, *400*
    Candidatus Liberibacter solanacearum on, S50, S173
    chilling injury in, S12
    Clavibacter michiganensis on, 252, S13, S22, S140
    effects of grafting on, S20
    Fusarium spp. on, S29, S52, S73, S101, S135
    grafting for management of *Ralstonia solanacearum*, S109
    Groundnut ringspot virus on, S134
    late blight crisis of, S161
    mulches with biofungicides for managing diseases in, S91
    new topsovirus of to North America, S100
    nutsedges in, S176
    pathogens, biological control agents, climate change and, S33
    Pelargonium zonate spot virus in, 798
    Pepper golden mosaic virus in, S50
    Phytophthora spp. on, 97, 619, 871, Cover photo June, S29, S147
    postharvest decays of, S33
    potato purple top (PPT) phytoplasma in, S135, S207, S208
    Potato spindle tuber viroid in, S95
    Pseudomonas solanacearum on, S34
    Psudocercospora fuligena on, S82
    Pythium spp. on, S73
    Ralstonia solanacearum on, S15, S55, S88
    Rhizoctonia solani on, 493
    Tobacco mosaic virus in, in Tehran, S4
    Tomato chlorosis virus in, 582
    Tomato yellow leaf curl virus in, S82
    Trichoderma hamatum 382 for control of *Xanthomonas euvesicatoria* on, S124
    viral diseases of in Chile, S110
    Xanthomonas spp. on, S34, S145, S178
  S. phureja (diploid potato)
    Phytophthora infestans on, S87
    Potato yellow vein virus in, S176
    Spongospora subterranea f. sp. *subterranea* on, S40
  Phytophthora infestans in, genetic structure of populations in eastern North America 2002-2009, S52
  resistance to *potato virus Y* in, S19
  S. tuberosum (potato)
    Alternaria solani on, 454, S14
    and *Bacillus* spp. in potato rhizosphere as PGPR inoculant, S20
    Candidatus Liberbacter solanacearum on, S138
    Clavibacter michiganensis subsp. *sepedonicus* on, S124
    Colletotrichum coccodes on, S93
    Dickeya sp. in, 134, 1128
    Fusarium graminearum on, 290
    late blight of, S26, S161
    modeling climate change and late blight risk, S121
    Pectobacterium spp. on, S31, S70
    Phytophthora erythroseptica on, S183
    Phytophthora infestans on: in Colombia, S21, S22; dihydroorotase dehydrogenase from, S39; intragenic technology for disease resistance, S101; *MES1* gene and systemic acquired resistance, S77; molecular interactions determining broad-spectrum partial resistance, S46
    Potato virus S in, S1
    Potato yellow vein virus in, S176
    Pratylenchus penetrans on, S180
    Pseudomonas syringae pv. *tomato* on, S23
    Ralstonia solanacearum on, 1250
    Rhizoctonia solani on, S32
    Spongospora subterranea f. sp. *subterranea* on, S40
    Streptomyces spp. on, 460, S82
    Trichoderma asperellum and *Spongospora subterranea* on, S40
    Verticillium spp. on, S67
    zebra chip disease of, S203
Soler, J., S40
Soltani Nejad, S., S113
Somatic cell selection, using thaxtomin A, potato resistance to common scab, 460
Somatic cybridization, in citrus, *Xanthomonas citri* subsp. *citri* resistance and, S37
Sommerhalder, R. J., 855
Sone, T., 612
Song, B., 183
Song, W., S97
Sonoda, R., 612
Sooty blotch and flyspeck (SBFS) complex of apple
  diversity and biogeography in eastern and midwestern U.S., 345
  in Iowa, phenology of natural inoculation, S54
  lime-sulfur for, S197
  in Turkey, S15
Sopee, J., S121
Sorghum
  allelopathy against wheat, S2
  as bioenergy crop in Alabama, S16
  Fusarium thapsinum and *Curvularia lunata* on, S90
  Peronosclerospora sorghi on, S106
  plant diseases in, S180
  Pseudomonas spp. on, S37, S106
Sorgoleone, and sorghum allelopathy against wheat, S2
Soto-Arias, J., S148
Sour cherry, *Aureobasidium pullulans* for controlling brown rot blossom blight of, S51
Southern leaf blight (SLB), in maize, mapping quantitative trait loci for, multiple disease resistance and, 72
Southern rice black-streaked dwarf virus (SRBSDV), in rice, in China, S146
Souza, A. G., S121
Sowa, D. A., S48
Soybean. *See Glycine max*
Soybean cyst nematode. *See Heterodera glycines*
Soybean dwarf virus (SbDV), effect of new aphid vectors on evolution of, S126
Soybean mosaic virus (SMV)
  pipo gene of, S135
  prevalence, incidence, and spatial dependence in Iowa, 931
  seed transmission of, genes involved in, S57
  vector systems from for exploration of soybean cyst nematode-plant interactions, S187
Soybean rust. *See Phakopsora pachyrhizi*
SPACES site, update on, S94
Spadafora, V. J., S166
Spaine, P. C., S94
Spaine, P. O., S82
Spanu, P., S56
Sparks, A., S121
Spartina alterniflora (smooth cordgrass), *Fusarium aestuarinus* on, S195
Spathiphyllum, *Phytophthora nicotianae* on, S125
Specialization, lack of in *Fusarium graminearum* and *F. pseudograminearum*, 1057
Speers, C., S69
Sphaerotheca spp.
  Regalia for control of, synergistic effect with other fungicides, S123
  on squash, evaluation of biological control agents for, S145
Spiers, J., S71
Spinach
  BAC library from, S35
  Verticillium dahliae on
    effect of limestone on, S142
    qPCR assay for detection and quantification of in seed, S107
    seed as source of on lettuce, S8
    virulence and molecular characterization of, S53
Spolti, P., S121
Spongospora subterranea, on potato, S40
Spooner, D., S19
Sporisorium holci-sorghi, on corn, S36
Spósito, M. B., S118, S119
Spring dead spot (SDS), *Ophiosphaerella herpotricha* on bermudagrass, 415
Springfield, T. N., 493
Spring-Pearson, S., 601
Spurlock, T. N., S121, S203
Squash. *See Cucurbita pepo*
Squash vein yellowing virus (SqVYV) in watermelon
  ELISA and qPCR for detection of, S134
  viruses in single and mixed infections, 1194
Sr9e and *Sr13*, and virulence of *Puccinia graminis* f. sp. *tritici* on wheat, S93
Sreedharan, A., S122

Srinivasachary, A., S136
Srinivasan, R., S122
Srivastava, P., S122
St. John, R., S91
St. Martin, S., S189
St. Martin, S. K., S190, S192
Stacey, G., 1111, S68
Stack, J., S181
Stadnik, M. J., S122
Stafford, C. A., S122
Stagonospora nodorum on wheat
effect of temperature on latent period, S144, S204
effector-induced host susceptibility pathways, S151
in Norway, S36
survey of toxins and sensitivity genes in southeastern U.S., S144
Stammler, G., 522, S37
Stanghellini, M., S122
Stansly, P. A., S77
Starch granules, and remnants of host-pathogen molecular interactions, 848
STAR-D (System for True, Accurate, and Reliable Diagnostics), overview of, S177
Starr, J., S123
Starr, J. L., S199
State regulatory inspection service, potato and tomato late blight crisis and, S161
Steadman, J., S122
Stebbins, T. C., S169
Steddom, K., S123
Steffenson, B., 80, S157
Steger, A., S26, S31
Stein, J. M., S15
Steiner, B., 367
Stenger, D. C., S68
Stenocarpella macrospora, on corn in Brazil, ITS sequence analysis of, S36
Stenocarpella maydis
chiA as a potential genetic marker for resistance against, S88
on corn in Brazil, S36
modification of maize protein by, 645
Stenotaphrum secundatum (St. Augustine grass), *Rhizoctonia solani* on, S36
Stensvand, A., 246, S8
Stephenson, R. C., S112, S123
Stevens, M., S147
Stevenson, K. L., S9, S105, S126
Stewart, P., S60
Stewart, S. M., S123, S190
STM0978 and *STM0693* genes, of *Salmonella enterica*, and plant colonization, S47
Stockwell, V. O., 1330, S59, S120
Stolz, M., S23
Stomata, of *Arabidopsis*, and defense against bacterial infection, S24
Stone, A. L., S42, S209
Stone, C. L., S37
Stone, E. A., S85, S92, S157
Stouthamer, R., 601
Stover, E., 239
Stowell, L., S152
Stoxen, S., S156
Strausbaugh, C. A., S123
Strawberry. *See Fragaria* spp.
Strawberry latent ringspot virus, in mint, S109
Strawberry mild yellow edge virus, in ecotypes of Chilean native strawberry, S110
Streptomyces spp.
and bacteriophage, for biological control of *Pseudomonas solanacearum* and *Xanthomonas campestris* on tomato, S34
S. lydicus, for management of *Fusarium oxysporum* f. sp. *niveum* on watermelon, S51
S. scabiei
on potato, 460
thaxtomin A production by, 91
S. stelliscabiei, on potato, S82
Striatin, of *Colletotrichum graminicola*, and mycelial growth, conidiation, and virulence to maize, S133
Strobilurin fungicides, for *Cercospora zeae-maydis* on corn, S202
Stubbs, G., S60
Stuchi, E. S., S41
Sturrock, R. N., 356
Su, H., S123
Suárez, A., S171
Subbarao, K., S53
Subbarao, K. V., 1222, S8, S24, S53, S64, S79, S107
Subedi, N., S124
Suberin, and thaxtomin A production, by *Streptomyces scabies*, 91
Succinate-dehydrogenase inhibitors
mutations in target protein of, fungicide sensitivity and, S37
for *Mycosphaerella graminicola*, resistance against, S12
Suciu, D., S117
Sucrose metabolism, and *Ralstonia solanacearum* on tomato, S55
Sudarshana, M. R., S3
Sudden vegetation dieback, on smooth cordgrass, *Fusarium aestuarinus* and, S195
Sugar, D., 1330
Sugar beet. *See Beta vulgaris*
Sugar beet cyst nematode, resistant catch crops and decline of, S84
Sugarcane. *See Saccharum* spp.
Sugarcane streak mosaic virus (SCSMV), in sugarcane, multiple infection in single plant, S140
Sugarcane yellow leaf virus (SCYLV)
molecular diversity of, S132
on sugarcane, S43
Sugawara, K., S52
Sugiyama, M., 560
Suh, S., S130
Sui, D. D., S107
Suizu, Y., S90
Sule, S., 863
Sullenger, A. R., S9
Summers, C., S129
Sumner, D. R., S153
Sun, H. Y., 522
Sun, J., S73
Sun, X., 208, 567, S24
Sun, X.-C., 468
Sundaram, S., S104
Sundin, G., S23
Sundin, G. W., 345, S69, S80, S166
Sung, S. S., S94
Sunkar, R., S3
Sunn hemp. *See Crotalaria juncea*
Surface coat proteins, of pine wood nematode, during host pine infection and in vitro culture, 1289
Surfactant
from *Bacillus mojavensis*, S10
and germination of *Myrothecium verrucaria* conidia, S57
Sutherland, A. M., S124
Sutton, T. B., 345
Sweany, R., S28
Sweany, R. R., S124
Sweet cherry. *See Prunus avium*
Sweet orange. *See Citrus sinensis*
Sweet potato. *See Ipomoea batatas*
Sweet potato leaf curl virus (SPLCV), for agroinfection, S95
Sweets, L., S137, S185
Switchgrass. *See Panicum virgatum*
Sykes, V. R., S80, S152
Synchytrium solstitiale, for biological control of yellow starthistle, S34, S206
System for True, Accurate, and Reliable Diagnostics (STAR-D), overview of, S177
Systemic acquired resistance
against *Xanthomonas citri* subsp. *citri*, soil application of neo-nicotinoid insecticides and acibenzolar-S-methyl for, S42
against *Xanthomonas translucens* pv. *poae*, of annual bluegrass, S23
Syverson, R. L., S124
Szabo, L. J., 432, S27, S156

Taber, S., S174
Taberner, V., S86
Tabor, G., S164
Tada, Y., 85, 120
Tagetes spp. (marigold), *Alternaria tagetica* on, Heritage 50 WDG fungicide for control of, S46
Tailocin, from *Burkholderia cepacia* complex, S31
Tajima, S., 85
Takahashi, M., 612
Takahashi, Y., 747
Take-all disease, and *Gaeumannomyces graminis* var. *tritici*, 404
Takeuchi, Y., 1289
TAL effectors, *Xanthomonas oryzae* pv. *oryzae* and, S159
Talezari, A., S124
Tall fescue. *See Festuca arundinacea*
Tallapragada, P., S208
Talledo Albujar, M. J., S125
Tally, A. H., S165
TAM O-201 locus, and resistance of wheat against *Puccinia coronata*, 484
Tan spot, *Pyrenophora tritici-repentis* on wheat
genetic diversity of mating type and toxin production genes, 474
QTL for resistance against, 460
Tanaka, K., 85
Tande, C., S59
Tangerine. *See Citrus reticulata*
Tanoak. *See Lithocarpus densiflorus*
Tanzarella, O. A., 390
Tarnowski, T. L., S125
Tatineni, S., 230, S125
Taylor, C. L., 493
Taylor, E., S172
Taylor, R. J., S183
TctE/tctD, and *Xanthomonas oryzae* pv. *oryzae* virulence, S25
Te Beest, D., S125
Tebuconazole
adaptation of *Fusarium graminearum* to, 436
for *Cercospora arachidicola* on peanut, S105
for *Puccinia graminis* f. sp. *tritici* on wheat, S44
Tech, K., S95
Tedford, E., S163
Tegg, R. S., 460
Teichmann, B., S198
Teixeira, D. C., S74
Teliz, D., S89
Tello, J., S95
Tello Marquina, J., S29, S39
Temsah, M., S111
TENGU phytoplasma, and witches' broom and dwarfism, S52
Tenuta, A., S185
Tertuliano, M., S199
Tetrazolium violet, for staining sorghum caryopses, S90
Tewolde, H., S30
Texas Phoenix palm decline (TPPD), of palm, *Candidatus* Phytoplasma palmae-related strain and, S175
TFT7, of tomato, and immunity-associated programmed cell death, S92
Thaher, N. H., S125
Thannhauser, T., S100

Thaxtomin A
somatic cell selection using, 460
Streptomyces scabies production of, 91
Thaxton, P. M., S153
Thermotherapy, for elimination of *Black raspberry necrosis virus* in, S56
Thielaviopsis basicola, on cotton, quantifying changes in root architecture caused by, S75
Thies, J. A., S65
Thiophanate-methyl, for *Botrytis cinerea* on strawberry, S6
Thomas, A., S9, S126
Thomas, B. J., 21
Thomashow, L. S., S85, S141
Thomma, B. P., S64
Thompson, D. C., S126
Thonart, P., S158
Thorne, J., S68
Thousand cankers disease, *Geosmithia morbida* on walnut, status in California, S48
Thowthampitak, J., S103
Thrips tabaci, as vector for *Iris yellow spot virus*, S122
Thru Ppoyil, S., S190
Thru Ppoyil, S. B., S126
Tian, B., S126
Tian, G., 593
Tilletia spp.
survival of secondary sporidia of, 645
on wheat, S41, S104
Time, I., S126
Timmer, L., S174
Timmer, L. P., S85
Tisserat, N., S153
Tisserat, N. A., S127
TMV inclusion bodies, virus accumulation and, S142
Tobacco. *See Nicotiana* spp.
Tobacco mosaic virus (TMV), in tomato in Tehran, incidence and variation of, S4
Tobacco ringspot virus (TRSV)
effects of and accumulation of silicon on, S144
in mint, detection and analysis of, S109
Todd, J. C., 1138
Tolin, S. A., S173, S205
Tomaso-Peterson, M., S126
Tomato. *See Solanum lycopersicum*
Tomato bushy stunt virus, expression vectors based on, S76
Tomato chlorosis virus (ToCV), in wild tomato, resistance against, 582
Tomato ringspot virus (ToRSV), in grape in Maryland, S88
Tomato spotted wilt virus (TSWV)
complementation between viruses in datura, S10
and feeding behavior of *Frankliniella occidentalis*, S122
NSm proteins of, S70
in peanut, S105
in pepper in Taiwan, S53
Tomato yellow leaf curl China virus (TYLCCNV), AV2 protein of as silencing suppressor, S139
Tomato yellow leaf curl virus (TYLCV)
and helper viruses, betasatellite, and DNA-2 satellite, S53
in tomato in Hawaii, S82
Tom-Cast, for control of tomato disease, S147
Tomlinson, J. A., 143
Tong, L., S77
Tooley, P. W., S208
Torres Puyo, C., S110, S118
Torreya taxifolia (Florida torreya), *Fusarium lateritium* on, S174
Tosa, Y., 436
Toth, I. K., S80
Townley, M. A., S77
Toxoflavin, and *Burkholderia glumae* on rice, S96
Transposon mutagenesis, of *Pantoea ananatis*, for mutant with reduced virulence, S144
Trapero, A., 1340
Trapero-Casas, A., S86
Travadon, R., 708
Travers, S. E., S4
Travis, J. W., 345, 539, S46, S49, S100
Tredway, L. P., S75
Trees. *See also Specific trees*
eastern Canadian, *Phytophthora ramorum* on, S197
Phytophthora ramorum on, screening Gulf Coast forest species for susceptibility, S202
structural defense mechanisms in, S197
wetwood/water pocket and, S198
Trelles Di Lucca, A., S125
Tremblay, A., S127
Tremblay, G., S193
Trently, D. J., 493
Triazole, for *Rhynchosporium secalis* on barley, S49
Tribolium castaneum (red flour beetles), *Aspergillus* spp. in, S29
Trichoderma spp.
T. asperellum, *Spongospora subterranea* and, on potato, S40
in crop management systems, S165
T. hamatum 382, for *Xanthomonas euvesicatoria* on tomato, S124
T. harzianum
for alleviation of biotic, abiotic, and physiological stresses in germinating seeds and seedlings, 1213
for control of root-knot nematode on tomato in Egypt, S1
and hormone production caused by *Fusarium oxysporum* on melon plants, 682
for pathogens on French beans in Kenya, S60
T. virens
for control of nematodes and soil-borne disease in vegetable production, S50
SM3 from, biological control and, S27
in vitro evaluation against fungal trunk disease pathogens in Mexico, S101
Trichodorus primitivus, in Golestan National Park in Iran, S124
Trichothecene, associated with *Fusarium graminearum*, 290
Trifloxystrobin
for *Cercospora sojina* on soybean, S145
for *Colletotrichum acutatum* on citrus, S118
Trifolium subterraneum (subterranean clover), 551
Trigiano, R., S71
Triky-Dotan, S., 367
Trinidad Chipana, E., S125
Trioza apicalis (carrot psyllid), on carrot, and *Candidatus* Liberibacter solanacearum, S88
Tripathy, S., S190
Triplett, L. R., S127
Triticum aestivum (wheat)
Blumeria graminis on, 1352
Cochliobolus sativus on, S45, S76
effect of environment, cultivar, and disease on, in Wisconsin, S67
evaluation of world genetic collections to resistance against harmful pathogens, S65
Fusarium graminearum on
aggressiveness of chemotypes with different levels of disease resistance, S189
Bacillus spp. for control of, S87
collection of isolates 40-300 meters above ground, S208
correlation between disease severity and deoxynivalenol, S186
cytochrome p450 gene and resistance, 183
deoxynivalenol and nivalenol accumulation in, 763
deoxynivalenol production in North Dakota, 1007
epidemics in Nebraska, 2007 and 2008, S191
evaluation of cultivars for resistance, S50, S186
glyphosate effect on DON content and inoculum production, S193
grain yield, cultivar resistance and, S113
monitoring using quantitative real-time PCR, 49, Cover photo February
in Ohio, El Niño-Southern Oscillation and atmospheric teleconnection patterns, S66
plant height and severity of crown rot, 1276
single-kernel near-infrared technology to sort kernels based on scab and deoxynivalenol levels, S134
spatial heterogeneity in disease incidence, S65
triazole-based fungicides for, 160
validation and haplotyping of resistance genes in diverse germplasm, S104
Gibberella zeae on
and deoxynivalenol in kernels, 719
influence of mating pheromones and affinity-selected peptides on, S43
leaf blotch disease complex on, in Norway, S36
leaf wetness duration and disease epidemiology, S76
mass spectrophotometric analysis of, 848
Mycosphaerella graminicola on
airborne inoculum of during growing season in Belgium, S26
analysis of populations from multiple states with mating type and SSR markers, S45
pathogen hijacking of disease resistance mechanisms in, S151
Puccinia spp. on
P. graminis f. sp. *tritici*, S44, S93
P. striiformis f. sp. *tritici*, 313, S53, S132
P. triticina, 376
PWT1 avirulence allele of *Magnaporthe oryzae*, 436
Pyrenophora tritici-repentis on, 460, 474, S45
Rhizoctonia solani on, S142
Septoria tritici on, S51
silicon transporters in, S196
sorghum allelopathy against, S2
Stagonospora nodorum on, S144, S151, S204
Tilletia spp. on, S41, S104
Wheat streak mosaic virus and *Triticum mosaic virus* coinfection of, 230
Xanthomonas campestris pv. *translucens* on, S59
Xanthomonas translucens pv. *undulosa*, S3
Triticum mosaic virus (TriMV), in wheat, and *Wheat streak mosaic virus* coinfection, 230
Trititrigia Zhong 4, *Puccinia striiformis* f. sp. *tritici* on, S133
Trivedi, P., S127
Trogolo, J. A., S61
Tronsmo, A., S8
Tronsmo, A. M., 246
Trouillas, F. P., 1048
Trujillo, C. A., S127
Tsai, C., S184
Tsai, C.-W., 830
Tschaplinski, T., S160
Tsn gene, and pathogen resistance in wheat, S151
Tsror (Lahkim), L., 271
Tsuge, T., 120
Tubaro, F., 390
Tucker, D., S189
Tucker, D. M., S190
Tudzynski, B., S18

Tuffen, M. G., S127
Tumbleweed. *See Salsola tragus*
Turechek, W., S127
Turechek, W. W., 239, 1194
Turfgrass. *See also Specific grasses*
  fifty years of breeding for disease resistance in, S193
  isoparaffin-based oil for controlling dollar spot and gray leaf spot in, S208
  Labyrinthula terrestris on, S204
  macroarray detection of pathogens of, S90
  Rhizoctonia spp. on, S152
  Rhizoctonia-like spp. on, S152
  Sclerotinia homoeocarpa on, S92
  Waitea circinata on, S152
Turina, M., 1100
Turner, R. S., S78
Turnip crinkle virus (TCV)
  role of capsid protein in viral systemic movement, S105
  R-protein mediated resistance to, S56
Turnip mosaic virus (TuMV), in *Arabidopsis*, differential regulation of host mRNA translation initiation, S188
Turoop, L., S128
Tweddell, R., S65
Tweddell, R. J., S193
Twieg, E., S73
Twizeyimana, M., S128, S190
Tychon, B., S32, S76
Tylenko, D. P., S100
Tyler, B., S190
Tyler, B. M., S158
Tyler, D., S30
Tylka, G., S30, S185
Tylka, G. L., S190
Type III secretion systems
  of *Dickeya dadantii*, S144
  of *Pantoea stewartii* subsp. *stewartii*, S27, S184
  of *Ralstonia solanacearum*, S55
  for screening for effectors of *Blumeria graminis* f. sp. *hordei*, S56
  small molecule inhibitors of in Gram-negative pathogens, S160
  Xanthomonas oryzae pv. *oryzae* and, S159
Type VI secretion system, of *Xanthomonas axonopodis* pv. *manihotis*, S86
Tzanetakis, I., S67
Tzanetakis, I. E., S103, S112, S128, S201
Tzeng, K., S71

UBL1 gene, and *Fusarium verticillioides* colonization of corn, S148
Uchida, J., S118, S128
Uddin, W., S106
Udvardi, M., S40
Ueda, M., 1289
Ueng, P., S59
Ullah, H., S128
Ullman, D. E., S122
Ulvan, for *Colletotrichum gloeosporioides* on apple, S122
Unfolded protein response, *Arabidopsis BAG7* gene and, S58
Upe pathogenesis gene, of *Ustilago maydis*, S24
Uppala, S., S128
Uppalapati, R., S160
Uppalapati, S., S129
Uppalapati, S. R., S54
Upper, C. D., 986
Ur-3 gene, *Uromyces appendiculatus* on bean and, S98
Urashima, A. S., S78
Urbez-Torres, J. R., S129
Urea sprays, for *Venturia inaequalis* on apple, S196
Uribe, P., S14
Urine, cow, suppression of *Rhizoctonia solani* on rice by, S56
Uromyces appendiculatus, on bean, *Ur-3* gene and, S98
Urrea, K., S129
Urrea, K. E., S203
Urrea, R., S129
USDA-APHIS
  diagnosticians and, S168
  permitting and regulatory policy changes: impact on stakeholders, S131
  plant pest permitting and containment facilities, S61
  potato and tomato late blight crisis and, S161
Ustilaginoidea virens, on rice, in Arkansas, S125
Ustilago maydis
  on corn, cytokinin biosynthesis and pathogenesis, S87
  snf1 gene of, as dual regulator of cell wall degrading enzymes, 1364
  Upe pathogenesis gene of, S24
  velvetA (*veA*) homolog in, and hyphal proliferation in maize, S59
Ustilago scitaminea, *Herbaspirillumn seropedicae* and *Azospirillum brasiliense* for control of, S111
Uyemoto, J. K., S3

Vaccinium spp. (blueberry, cranberry)
  Botryosphaeriaceae on, S138
  Colletotrichum acutatum on, rapid screening for resistant lines, S83
  V. corymbosum (blueberry)
    Fusarium sp. on, in Argentina, S21
    pathogens of in nursery plants, S99
  V. meridionale., *Alternaria* spp. on, S19
  V. oxycoccos (cranberry)
    Helicobasidium sp. on, S94
    Physalospora (*Acanthorhynchus*) *vaccinii* on, S101
  phosphoric acid from fungicides and fertilizers, S16
  postharvest decays of, S81
  Xylella fastidiosa on, S199
Vadivel, K., S129
Vahling, C., S30
Vaiciunas, J., S94
Vaillant-Gaveau, N., 424
Vaira, A., S71
Valdivia, C., S41
Valenzuela-Solano, C., S87, S101
Vallad, G., S129, S140
Vallad, G. E., 1222, S177
Valverde, R. A., S112, S115
Van Bruggen, A., S177
van Bruggen, A. H. C., 593
van den Berg, F., 1169
van den Bosch, F., 638, 1030, 1169
Van den Bosch, F., S51
Van der Does, D., S160
van der Lee, T., 328
van der Werf, W., 1146
van der Wolf, J. M., 134, 1128
van Kan, J. A., S151
Van Rij, N., S181
van Santen, E., S18
van Schadewijk, T., S81
van Veen, J. A., 1128
Van Wees, S. C., S160
Vanasse, A., S193
Van-Ghelder, C., 384
Vargas, A. M., S7, S22, S29
Vargas, H. A., S40
Vasquez, S., S95
Vaughn, V. L., S76
Vazquez-Mundo, M., S29
VeA homolog, in *Ustilago maydis*, S59
Vectors, for transient expression of recombinant protein in plants, S117
Vega, B., S130
Vegetative compatibility groups
  of *Aspergillus flavus*, S43, S85
  of *Aspergillus parasiticus*, S85
  of *Colletotrichum coccodes*, S182
Velasquez, N. Y., S130
Velvis, H., 134
Vemulapati, B., S130
Venkata, B., S11
Venturi, V., 262
Venturia inaequalis
  on apple
    benzimidazole resistance, S18
    dodine resistance and, S27
    fungicide resistance in, S183
    post-harvest foliar urea sprays to reduce ascospore production, S196
    and resistance to DMI fungicides, S100
  fungicide resistance in, in Indiana and Michigan, S23
  QoI inhibitors for, and resistance in Michigan, S69
Vera Cruz, C. M., S11, S157
Vercauteren, A., S42
Verhalen, L. L., S153
Verma, S. S., S130
Vermeire, M., S58
Veronese, P., S64
Verticillium spp.
  V. albo-atrum and *Verticillium dahliae*, S64
  V. dahliae
    Agrobacterium tumefaciens-mediated transformation of, S79
    on cotton, S75, S140
    intergenic spacer region of, S79
    on mint, S77
    mitochondrial haplotype analysis for differentiation of races, S78
    molecular variation among, mitochondrial haplotype analysis for differentiation of races, 1231
    molecular variation among, PCR-based differentiation of races and, 1222
    on peanut, pod yield and, S204
    quantification and rapid detection of in soil, S14
    on spinach: effect of limestone on, S142; in seed, qPCR assay for detection and quantification, S107; seed as source of in lettuce in California, S8; virulence and molecular characterization of, S53
    on strawberry, S193
    and *Verticillium albo-atrum*, S64
  on potato, management with crop rotations, S67
  species limits and evolution of, S53
Vesicle-associated penetration resistance, *H* gene and resistance to Hessian fly and, 279
Vicente, M., S86
Vico, I., 42, S56, S58
Victoriocin
  characterization of as novel broad-spectrum antifungal protein from *Helminthosporium victoriae*, 880
  overexpression of gene for enhanced antifungal properties, 890
Vidaver, A. K., S38, S187
Vidic, U., S81
Vigaya Satya, R., S117
Vigna radiata (mung bean), Annamalai mixture for control of pathogens in, S129
Vijay Krishna Kumar, K., S170
Villamor, D. V., S130
Villani, S., S27
Villanueva, L. M., S130
Vinatzer, B. A., 208
Vincelli, P., S6
Vincent, M., S80
Vining, K. J., S77
Viroids

evolution of, S149
multiplex real-time RT-PCR assay for simultaneous detection of, S72
Virulence factors, of *Xylella fastidosa*, role of c-di-GMP biosynthesis genes, S7
Viruses
bioinformatic analysis of microarray and next generation sequencing data, S154
broad-spectrum resistance against, oligoadenylate system and, S38
in cowpea, effect of multiple infections on seed transmission in, S92
evolution of geminiviruses vs. RNA viruses, S149
evolutionary and systems biology of emerging, S149
filamentous, structural studies of by X-ray fiber diffraction and cryo-electron microscopy, S60
genomic sequencing for population analysis, S154
and high-throughput sequencing, S154
immunocapture RT-PCR for detection of, S139
microarray-based detection and identification, S10
national standard for certification of ornamental and fruit tree nursery stock and, S135
Nepoviruses, characterization of by integrated approach, S81
next-generation sequencing and virus ecology, S154
overview of evolution of, S149
and *Phomopsis longicolla* on soybean, interactions between, S148
of plants in Great Smoky Mountains National Park, S112
population processes and evolution of, S149
real-time PCR for sensitive detection of panel of, S72
simple extraction method for detection of, S101
in soybean, in Nigeria, S126
TMV inclusion bodies and, S142
universal plant virus microarray development and validation, S154
Virus-induced gene silencing (VIGS)
Fusarium virguliforme inoculation methods for VIGS study of soybean sudden death syndrome, S187
in *Nicotiana tabacum* with Tobacco curly shoot virus, S52
novel bipartite launch system for a potexviral vector for, S71
and soybean resistance against *Phakopsora pachyrhizi*, S96
Vitis spp. (grape)
Aspergillus spp. on, S95
Erysiphe necator on, S38
Grapevine virus A on, in Washington, S81
Phaeomoniella chlamydospora on, in Mexico, S87
Phomopsis viticola on, S6
Plasmopara viticola on, S194
Tomato ringspot virus in, S88
V. vinifera
Arabis mosaic virus on in Iran, S31
Botrytis cinerea on, S49
co-occurrence of viruses, S90
Erysiphe necator on: density-dependent latency of, S38; from different species and geographic origins, 1185; dynamics of ascospore maturation and discharge, 1321; effect of acute low-temperature events on, 1240; environmental conditions and primary infection in Michigan, S9; new biocontrol strategy for, S19
esca disease of, early events prior to visual symptoms, 424
Grapevine leafroll viruses in, S45, S90
grapevine necrotic union on, S3
mycoviruses in, S5
phosphoric acid from fungicides and fertilizers, S16
Xylella fastidiosa on: biological control of, S52; management strategies for, S201; nutritional treatments and, S16; Pierce's disease and, 1089, Cover photo October
Vitoreli, A., S34
Vitoreli, A. B., S177
Vitoreli, A. M., S110
Vittal, R., S131
Vivancos, J., S196
Vodkin, L., S106
Voisin, R., 384
Voss, H.-H., 904
Vowell, T., S96
Vu, A. L., S131
Vunsh, R., 225
Vy, T. T. P., 436

Waalwijk, C., 328
Wach, M., S163
Wade, L., S166
Wadl, P. A., S45
Wager-Page,' S. A., S131
Waitea circinata, on turfgrass, S152
Wakefield, L. M., S38
Walcott, R., S200
Walgenbach, P. J., S131
Walker, D. R., S122
Walker, G. P., S122
Walker, K., S63
Walker, K. A., S131
Walker, N., S131
Walker, N. R., 415
Walkinshaw, C., S203
Walkinshaw, C. H., S131
Wall, G. C., S178
Wall, M. L., 848
Wallace, R. W., S173
Waller, L., S190
Wallhead, M. W., S113, S132
Wallis, C., S132
Walnut. *See Juglans* spp.
Walnut twig beetle. *See Pityophthorus juglandis*
Waltz, C. F., S78
Wan, A., S132
Wang, B., S133
Wang, C., S62, S133
Wang, D., 192, S10, S104, S133, S154
Wang, G., S31
Wang, H., S132, S190
Wang, H. C., 522
Wang, J., 822, S23, S71, S108, S132
Wang, K., S133
Wang, L., S24
Wang, M., S53, S105, S132
Wang, N., S7, S44, S55, S122, S127, S141
Wang, Q., S49, S73, S74, S146
Wang, S., S133
Wang, X., 573, S45, S132, S133, S135
Wang, Y., 573
Wang, Y. G., 1276
Wangdi, T., S54, S160
Ward, L., S70
Ward, L. I., 1282
Ward, N. A., S134, S203
Ward, T., S157
Water extracts of compost. *See* Compost water extracts
Water pocket, overview of, S198
Watermelon. *See Citrullus lanatus*
Watermelon mosaic virus (WMV), emerging populations of in southeastern France, 1373
Watson, A., S162
Watson, A. K., S197
Watt, B., S194
Weather balloons, for remote sensing applications for plant pathology, S188
Webster, C., S134
Webster, R. K., 502
Wedge, D. E., S134
Weems, J. D., S191
Weerakoon, M., S134
Wegulo, S., S134, S147, S186, S191
Wegulo, S. N., 230, S50
Wei, W., S135, S206, S207, S208
Wei, Y. M., 1276
Weil, C., S11
Weiland, J., S153
Welch, K. D., S135
Welham, S., 1030
Welker, R., S73
Welker, R. M., S109
Weller, D. M., 404, S85, S141
Welliver, R., S42, S135
Welser, M. J., 246
Wen, A., S135
Wen, J., S146
Wen, R., S135
Weng, Z., S154
Werres, S., S42
Westecott, R., 1057
Westerdahl, B. B., S135
Westerman, R. P., S17
Western Weather Workgroup, forecasting weather and climate for plant disease models, S179
Westphal, A., S136
Westwood, J., S70
Westwood, J. H., S147
Wetwood, overview of, S198
Whalen, M. C., S101
Wharton, P. S., S14
Wheat. *See Triticum aestivum*
Wheat streak mosaic virus (WSMV)
new method for collection and detection of within host, S103
relationships among isolates, S110
tag-array minisequencing-based system for detecting and genetic fingerprinting, S18
transient expression vector based on, S125
in wheat, and *Triticum mosaic virus* co-infection, 230
Wheeler, G., S108
Wheeler, H. L., 848
Wheeler, M. J., 345
Wheeler, T., S200
Wheeler, T. A., S136, S138, S153, S173
Whitaker, B., S58
Whitaker, B. D., 42
White, F., S159
White, J., S75
White, T. L., S145, S178
Whitebark pine. *See Pinus albicaulis*
Whiteflies. *See Bemisia tabaci*
Whitehead, J., S28
Whitfield, A. E., S184
Whitham, S., S187
Whitham, S. A., S96
Wick, R., S32
Wick, R. L., S195, S196
Wicklow, D. T., 645
Widholm, J. M., 897
Widmer, T. L., S34, S136, S202, S206
Wiemann, P., S18
Wiest, A., S80
Wiglesworth, M., S166
Wilcox, W. F., 1240, S38, S88, S136
Williams, B., S58, S160
Williams, D., S60
Williams, H. L., 356
Williams, J., S38
Williams, J. L., S136
Williams, W. P., S137
Willie, K., S105
Willocquet, L., S136, S156

Willyerd, K. T., S137
Wilson, A. J., 460
Wilson, C., S137
Wilson, C. R., 460
Wilson, R., S137
Windels, C. E., S16
Windham, A., S71
Windham, G. L., S137
Windham, M., S71
Window-pane methodology, for relationship between yearly fluctuations in Fusarium head blight intensity and environmental variables, 784
Wingo, R. M., S124
Winterhagen, P., S38
Wintermantel, W. M., S103, S128, S138
Winters, S. A., S153
Wirsel, S. G. R., 444
Wise, K., S50
Wise, R., S56, S157
With, K. A., S120
Woeste, K. E., S17
Wolf, J., S208
Wolfe, D. W., S26
Woloshuk, C. P., S62, S108, S109, S138
Woltjen, C. D., S191
Wong, A. W., 345
Wong, F. P., S152, S168
Wood, A., S182
Wood, E., S14
Woodruff, W., S94
Woods, J. L., S138
Woodward, J. E., S136, S138, S200, S204
Woodward, S., S95
Workneh, F., S50, S138, S203
Worley, E., S40
Worthington, C. J., S157
Wraight, S. P., 1307
Wrather, A., S70
Wright, A. F., S138
Wright, D., S181
Wright, D. L., 941, S122, S143, S178, S186, S204
Wright, E. R., S21, S99
Wright, R., S183
WRKY proteins
  in low 18:1-derived defense signaling pathway, S38
  and response of *Arabidopsis* spp. to stresses, S47
Wu, B., S24
Wu, B. M., S139
Wu, J., S139
Wu, R., 91
Wu, T., 573, S173
Wu, W., S135, S206, S207, S208
Wulff, N. A., S74
Wyenandt, A., S198
Wyenandt, C. A., S139, S196

Xanthomonas spp.
  X. albilineans, on sugarcane, S39, S78, S111
  X. anxonopodis pv. *citri*, on calamondin and kumquat, S24
  X. arboricola pv. *pruni*, on peach and nectarine, S11
  X. axonopodis
    on bean, S185
    on cassava, S8, S127
    ColS/ColR two-component system and virulence of, S141
    comparative genomic analysis of strains A^{w}12879 and 5208, S55
    on grapefruit, S71
    HrpG and HrpX regulons of, S44
    lipopolysaccharide biosynthetic genes of, S71
    on soybean, S8, S103
    type VI secretion system of, S86
  X. campestris
    on *Brassica* spp., S207
    on pumpkin, S108
    on tomato, S34
    on wheat, S59
  X. citri
    copper and streptomycin for, S172
    copper resistance in, S13
    on cybrid citrus, S37
    on grapefruit, S15, S36, S116
    hrp system and *pthA* and *pthB* from, S108
    soil application of neo-nicotinoid insecticides and acibenzolar-S-methyl for, S42
    survival on symptomatic fruit in storage, S172
  X. euvesicatoria, *Trichoderma hamatum* 382 for, on tomato, S124
  X. fragariae, on strawberry, S64, S83, S174
  X. hortorum pv. *carotae*, S139
  identification of using Raman spectroscopy, S96
  X. juglandis, kasugamycin and, S166
  X. oryzae
    AroQγ chorismate mutase and rice virulence, 262
    and AvrBs3-related family of transcription activation-like (TAL) type III effectors, S159
    genotypic and pathotypic diversity in China, S96
    resistance to rice bacterial blight, D-allose and, 85
    rpfC control tctE/tctD expression and mutations, reduced virulence and, S25
    sequence divergence from *oryzicola* pathovar, S127
  PAMDB and, 208
  X. perforans
    on pepper, S103
    on tomato, S178
  on shrub rose, S129, S177
  on tomato, evaluation of biological control agents for, S145
  X. translucens
    on annual bluegrass, S23
    on wheat, S3
  type III secretion system of for screening for effectors, S56
Xia, J., S139
Xia, J. Q., S72, S139
Xia, X. C., 313
Xia, Y., S139
Xiang, Q., S140
Xiao, C., S63, S143, S163
Xie, C., S140
Xie, L., 822
Xie, Y., S47
Xing, J., S204
Xiong, Z., S154
Xiphinema index and *Grapevine fanleaf virus*, 384, S93
Xiphinema pachtaicum, in Golestan National Park in Iran, S124
X-ray fiber diffraction, for studies of filamentous plant viruses, S60
Xu, D., S132, S140, S146
Xu, D.-G., S96
Xu, H. Q., 183
Xu, J., 328, S52, S151
Xu, J. S., 328
Xu, L., S140
Xu, S., S93, S151
Xu, X., S13, S140
Xu, X.-M., 814
Xue, B., S116, S141
Xyleborus glabratus (redbay ambrosia beetle) and *Raffaelea lauricola*
  on avocado in Florida, S176
  on redbay, 1118, S177
Xylella fastidiosa
  on almond, S119
  from almond and grape in California, S24
  on *Arabidopsis thaliana*, S110
  biofilm formation and, S28, S72
  on blueberry, in southeastern U.S., S199
  c-di-GMP biosynthesis genes of, regulatory role, S7
  chitin and virulence and transmission of, S62
  differentiation between strains using analysis of environmentally-mediated genes, S97
  disease intensity and yield reduction, in Brazil, S41
  expression rate of *zot* and *gyr* genes in, S116
  genotyping using multiplex PCR, S88
  glassy-winged sharpshooter saliva as vector for inoculation, S9
  on grapevine
    biological control of, S52
    biomarkers for diagnosis of, 1089, Cover photo October
    nutritional treatments and, S16
    in Washington, management strategies for, S201
  LAMP and RT-PCR for rapid detection of, 1282
  multilocus sequence typing for, 601
  in petioles, detection of, S6
  in Pierce's disease, 601, 1089, Cover photo October
  plasmid replication and stability factors of, S68
  role of c-di-GMP biosynthesis genes in, S7
  selection of single chain variable fragments against by phage display, S143
  subspecies identification using *zot* and *gyr* genes, S115
  on tobacco, S29
  virulence mechanism in xylem fluid, S118

Yadagiri, K., S204
Yaghmour, M. A., S141
Yajima, W., S130
Yakabe, L. E., S141
Yamamoto, M., 120
Yamaoka, N., S90
Yamasaki, S., 560
Yamasaki-Kokudo, Y., 85
Yan, G. J., 1276
Yan, G. P., 216
Yan, N. F. Almeida, S., 208
Yan, Q., S141
Yang, B., S159
Yang, C., S96, S144
Yang, D., S198
Yang, J., S40, S141
Yang, K., S158
Yang, L., 328
Yang, M., S141
Yang, W., S141, S142
Yang, X., S89, S132, S142, S144
Yang, X. B., 58
Yang, X. M., 1276
Yang, Y., S49, S73, S74, S146
Yao, C., S63, S142
Yao, J. B., 1276
Ye, X., S105
Yellow shoot disease. *See* Huanglongbing
Yigo Experiment Station, S82
Yin, C., S142
Yin, J., S55, S57, S142
Yin, Y., S63, S143, S163
Yoder, K. S., 345
Yokomi, R. K., 319
Yokota, K., S143
Yoshida, M., 763
Young, C., S7
Young, H., S37
Young, H. M., S143, S178, S204
Young, R. F., S31

Young, S., S64
Younkins, A., S209
Yu, D., 328
Yu, J., S191
Yu, K., S139
Yu, X., S136
Yuan, L., S204
Yuan, Q., S143
Yuan, X., 601
Yuan, Z. Q., 460

Zablotowicz, R. M., S1
Zacaria, J., 199
Zaccaron, M. L., S144
Zaid, A. M., S144
Zala, M., 172
Zale, J., S131
Zamanizadeh, H., S4, S6, S32, S62, S84, S101, S124
Zampro
  for control of oomycete diseases of vine and vegetable crops, S131
  for control of *Phytophthora capsici* on vegetable crops, S57
Zea mays (corn, maize)
  aflatoxin in, S1, S8
  Aspergillus flavus on
    and *Acremonium zeae* interactions, S137
    kernel maturation and transcriptional activity, S108
    resistance against, S37
    selection indexes to improve resistance to, S4
    soil vs. corn kernel populations, S124
    at-tassel fungicide application and, S49
    variation in competitive ability among isolates, 150
    in vivo vs. in vitro aflatoxin production, S103
  Aspergillus section *Nigri* on, S10
  Bacillus thuringiensis (Bt) proteins in, S183
  Cercospora spp. on, S117, S202
  Cochliobolus heterostrophus on, S114
  Colletotrichum graminicola on, S19
  distillers wet grains, microbial characterization of, S181
  drought stress of, S57
  for ethanol production, *Fusarium* toxins in, S180
  foliar diseases of, multiple disease resistance and, 72
  Fusarium spp. on
    F. moniliforme, S4
    F. verticillioides: characterization of genes regulating colonization, S148; FB1 translocation in seedlings infected with, S147; *FvNoxR* gene of, S44; in Nigeria, S117; nitric oxide detoxifying flavhemoglobin and, S10; polyketide biosynthetic gene clusters in, S18
  hail-damaged, S34, S109
  hypersensitive response of, S11
  impact of cropping sequence on, S20
  influence of foliar fungicides on components of grain yield in, S132
  Maize streak virus in, 1138, S113
  modification of chitinase of by *Stenocarpella maydis*, 645
  nematodes in, in Nebraska, S182
  Pantoea agglomerans on, S119
  Pantoea stewartii on, S27, S85, S188
  plant-parasitic nematodes in, S180
  Pratylenchus penetrans on, S184
  Puccinia polysora on, S27
  Rhizoctonia solani on, 172, S4
  Sporisorium holci-sorghi on, S36
  Stenocarpella spp. on, in Brazil, S36
  at-tassel fungicide application on, S5, S49
Zearalenone, in corn for ethanol production, S180
Zearfoss, A. D., S144, S204
Zebra chip
  Candidatus Liberibacter solanacearum on potato and, S50, S135
  overview of, S203
Zelaya-Molina, L. X., S191
Zelenev, V. V., 593
Zellermann, E., S22
Zellner, W. L., S144
Zenbayashi, K. S., S63
Zeng, Q., S64, S68, S75, S144
Zernova, O. V., 897
Zhai, L., S145
Zhan, J., 855
Zhan, S.-W., 436
Zhang, A. B., S89
Zhang, C., S96, S164, S187
Zhang, G., S145, S182, S191
Zhang, H., 328, 822
Zhang, J., S139, S146
Zhang, J. B., 183
Zhang, L., S138
Zhang, M., S145
Zhang, M. Q., 239
Zhang, N., S90
Zhang, P., S73
Zhang, S., S145, S146, S178
Zhang, X., S68
Zhang, Z., 328, S38, S151, S192
Zhao, D., 573
Zhao, W., S23
Zhao, Y., 192, 573, S29, S69, S80, S104, S133, S135, S206, S207, S208
Zheng, D., S107
Zheng, Y., S3, S53, S146
Zheng, Y. L., 1276
Zhong, S., 1007, S4, S69, S104, S189
Zhou, C., S146
Zhou, G., 313, S132, S140, S146
Zhou, J., S128
Zhou, L., S41, S190
Zhou, L. J., 239
Zhou, M., S23
Zhou, M. G., 522
Zhou, S., S75
Zhou, X., S52, S139, S146
Zhou, X. C., 313
Zhu, S. S., 1162
Zhu, X.-Q., 997
Ziebell, H., S70, S147
Ziems, A. D., S187
Zimba, P. V., S43
Zimmerman, B. H., S39
Zinnia, powdery mildew on, S74
Ziska, L., S179
Ziska, L. H., S208
Zitomer, N. C., S147
Zitter, T. A., S147
Ziv, G., 97
Zot gene
  expression rate of in *Xylella fastidiosa*, S116
  for identification of *Xylella fastidiosa* subspecies, S115
Zou, W.-C., S96
Zoysia spp. (zoysiagrass)
  Exserohilum sp. on, in Texas, S57
  Rhizoctonia solani on, S91, S203
Zuñiga-Davila, D., S20
Zucchini lethal chlorosis virus (ZLCV), in cucurbits, S87
Zuluaga, A., S147
Zwingman, M., S147
Zwonitzer, J., S114
Zwonitzer, J. C., 72